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SESSIONAL PAPERS

VOLUME XXXIX.—PART IV.

Third Session of Eleventh Legislature

OF THE

PROVINCE OF ONTARIO

SESSION 1907

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Bee-Keepers', Report	20	*Printed.*
Births, Deaths and Marriages, Report	7	"
Chatillon *vs.* Bertrand, correspondence	73	*Not printed.*
Children, Dependent, Report	35	*Printed.*
Conmee Clauses, Report on	62	*Not printed.*
Dairymen's Association, Report	21	*Printed.*
Davis Estate, correspondence	64	*Not printed.*
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Education, Report	12	*Printed.*
Education Department, Orders-in-Council	50	*Not printed.*
Elections, Returns	46	*Printed.*
Electric Power Commission, Report	48	"
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No. 2.. Estimates for the service of the Province until the Estimates of the year are finally passed. Presented to the Legislature 25th January, 1907. *Not printed.* Estimates for the service of the Province, until the Estimates for the year are finally passed. Presented to the Legislature 14th February, 1907. *Not printed.* Estimates for the year 1907. Presented to the Legislature, 26th February, 1907. *Printed.* Estimates (Supplementary), for the year 1907. Presented to the Legislature, 9th April, 1907. *Printed.* Estimates (Supplementary), for the year 1907. Presented to the Legislature, 15th April, 1907. *Printed.*

No. 3.. Report of the Minister of Lands, Forests and Mines for the year 1906. Presented to the Legislature 14th February, 1907. *Printed.*

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No. 4.. Report of the Bureau of Mines for the year 1906. Presented to the Legislature, 20th March, 1907. *Printed.*

No. 5.. Report of the Commissioners of the Queen Victoria Niagara Falls Park, for the year 1906. Presented to the Legislature, 19th February, 1907. *Printed.*

No. 6.. Report of the Minister of Public Works for the year 1906. Presented to the Legislature, 8th March, 1907. *Printed.*

No. 7.. Report relating to the Registration of Births, Marriages and Deaths during the year 1906. Presented to the Legislature, 30th January, 1907. *Printed.*

No. 8.. Report of the Temiskaming and Northern Ontario Railway Commission, for the year 1906. Presented to the Legislature, 15th March, 1907. *Printed.*

No. 9.. Report of the Ontario Railway and Municipal Board, for the year 1906. Presented to the Legislature, 31st January, 1907. *Printed.*

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No. 11.. Loan Corporations, Statements by Building Societies, Loan and other Companies, for the year 1906. Presented to the Legislature, 7th March, 1907. *Printed.*

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No. 13.. Auditors' Report to the Board of Governors University of Toronto, on Capital and Income Accounts, for the year ending 30th June, 1906. Presented to the Legislature, 30th January, 1907. *Printed.*

No. 14.. Report of the Ontario Agricultural College and Experimental Farm, for the year 1906. Presented to the Legislature, 21st March, 1907. *Printed.*

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No. 17.. Report of the Fruit Experimental Stations of the Province, for the year 1906. Presented to the Legislature, 21st March, 1907. *Printed.*

No. 18.. Report of the Vegetable Growers' Association for the year 1906. Presented to the Legislature, 21st March, 1907. *Printed.*

No. 19.. Report of the Entomological Society, for the year 1906. Presented to the Legislature, 21st March, 1907. *Printed.*

No. 20.. Report of the Bee-Keepers' Association of the Province, for the year 1906. Presented to the Legislature 21st March, 1907. *Printed.*

No. 21.. Report of the Dairymen's Associations of the Province, for the year 1906. Presented to the Legislature, 21st March, 1907. *Printed.*

No. 22.. Report of the Live Stock Associations of the Province, for the year 1906. Presented to the Legislature, 21st March, 1907. *Printed.*

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No. 24. . Report of Women's Institutes of the Province, for the year 1906. Presented to the Legislature, 19th February, 1907. *Printed.*

No. 25. . Report of the Farmers' Institutes of the Province, for the year 1906. Presented to the Legislature, 20th March, 1907. *Printed.*

No. 26. . Report of Agricultural Societies of the Province (Fairs and Exhibitions), for the year 1906. Presented to the Legislature, 19th February, 1907. *Printed.*

No. 27. . Reports of the Horticultural Societies of the Province, for the year 1906. Presented to the Legislature, 21st March, 1907. *Printed.*

No, 28. . Report of the Bureau of Industries of the Province, for the year 1906. Presented to the Legislature, 21st March, 1907. *Printed.*

No. 29. . Report of the Inspectors of Factories for the year 1906. Presented to the Legislature, 21st March, 1907. *Printed.*

No. 30. . Report of the Bureau of Labour for the year 1906. Presented to the Legislature, 11th March, 1907. *Printed.*

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No. 32. . Report of the Ontario Game Commission, for the year 1906. Presented to the Legislature, 19th March, 1907. *Printed.*

No. 33. . Report of the Department of Fisheries, for the year 1905. Presented to the Legislature, 8th March, 1907. *Printed.*

No. 34. . Report upon the Archives of the Province, for the year 1906. Presented to the Legislature, 20th March, 1907. *Printed.*

No. 35. . Report of Work relating to Neglected and Dependent Children of Ontario, for the year 1906. Presented to the Legislature, 20th March, 1907. *Printed.*

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No. 37. . Report of the Inspector of Division Courts, for the year 1906. Presented to the Legislature, 20th March, 1907. *Printed.*

No. 38. . Report of the Inspector of Legal Offices, for the year 1906. Presented to the Legislature, 22nd February, 1907. *Printed.*

No. 39.. Report of the Inspector of Registry Offices, for the year 1906. Presented to the Legislature, 12th April, 1907. *Printed.*

No. 40.. Report of the Secretary and Registrar of the Province, for the year 1906. Presented to the Legislature, 20th March, 1907. *Printed.*

No. 41.. Report upon the Lunatic and Idiot Asylums of the Province, for the year ending 30th September, 1906. Presented to the Legislature, 20th March, 1907. *Printed.*

No. 42.. Report upon the Prisons and Reformatories of the Province, for the year ending 30th September, 1906. Presented to the Legislature, 11th March, 1907. *Printed.*

No. 43.. Report upon the Hospitals and Charities of the Province, for the year ending 30th September, 1906. Presented to the Legislature, 12th February, 1907. *Printed.*

No. 44.. Report upon the Operation of Liquor License Acts, for the year 1906. Presented to the Legislature, 20th March, 1907. *Printed.*

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No 45.. Report of the Provincial Municipal Auditor, for the year 1906. Presented to the Legislature, 1st February, 1907. *Printed.*

No. 46.. Supplementary Return from the Record of the several Elections in the Electoral Divisions of Cardwell, Hamilton East, West Middlesex and Carleton, since the General Elections on January 25th, 1905, shewing: (1) The number of Votes Polled for each Candidate in the Electoral District in which there was a contest; (2) The majority whereby each successful Candidate was returned; (3) The total number of votes polled in each District; (4) The number of votes remaining unpolled; (5) The number of names on the Voters' Lists in each District; (6) The population of each District as shewn by the last Census. Presented to the Legislature, 24th January and 12th April, 1907. *Printed.*

No. 47.. Report upon the state of the Library. Presented to the Legislature, 2nd January, 1907. *Not printed.*

No. 48.. Report of the Hydro-Electric Power Commission of the Province, for the year 1906. Presented to the Legislature, 12th April 1907. *Printed.*

No. 49.. Report, with the evidence, of the Text-book Commission. Presented to the Legislature, 1st February, 1907. *Printed.*

No. 50.. Copies of Orders-in-Council, under section 27, of the Act respecting the Department of Education. Presented to the Legislature, 11th February, 1907. *Not printed.*

No. 51. . Return to an Order of the House of the sixteenth day of March, 1906, for a Return shewing the names of all License Inspectors appointed since the first day of February, 1905, together with their addresses and the dates of their appointment; the business or occupation of each Inspector prior to his appointment and the present occupation or business, other than their official business, of each such Inspector. Presented to the Legislature, 11th February, 1907. Mr. *McMillan*. *Not printed.*

No. 52. . Return to an Order of the House, of the thirtieth day of January 1907, for a Return giving the following information regarding the Toronto Electric Light Company, Limited. 1. Date of incorporation. 2. Applicants for Incorporation. 3. Objects of the Company. 4. Names of the Provisional Directors. 5. Amount of Capital. 6. Increase of Capital Stock. 7. Names of the Directors and Shareholders of the Company, according to the last Return to the Government. Presented to the Legislature, 11th February, 1907. Mr. *Hoyle*. *Not printed.*

No. 53. . Return to an Order of the House of the nineteenth day of February, 1907, for a Return of copies of all correspondence between the Government, or any member or official thereof, and any other person or persons, with reference to the dismissal of James Gillespie, of Picton, from the office of Sheriff of the County of Prince Edward. Presented to the Legislature, 26th February, 1907, Mr. *Currie*. *Not printed.*

No. 54. . Return to an Order of the House of the seventh day of February, 1907, for a Return shewing:—(1) List of names of Police Magistrates and Justices of the Peace in and for the County of Essex, on the 31st January, 1905. (2) List of names of Police Magistrates and Justices of the Peace in and for the County of Essex, appointed since February 1st, 1905. (3) Names of those who have qualified as Police Magistrates, or Justices of the Peace, in the County of Essex. Presented to the Legislature, 27th February, 1907. Mr. *Auld*. *Not printed.*

No. 55. . Return of all Fees received by the Master of Titles under Rule 77 of the Land Titles Act, for the year 1906. Presented to the Legislature, 5th March, 1907. *Not printed.*

No. 56. . Copies of Orders-in-Council commuting the Fees payable to His Honour Judge Finkle and increasing the commutations paid to His Honour Judge Benson, His Honour Judge McDonald, His Honour Judge Hardy and His Honour Judge Snider, under Section 187 of the Judicature Act and Subsection 2 of Section 84 of the Surrogate Courts Act. Presented to the Legislature, 5th March, 1907. *Not printed.*

No. 57. . Return to an Order of the House of the thirteenth day of February 1907, for a Return shewing the various kinds of Patents issued to Locatees on St. Joseph Island. Presented to the Legislature, 5th March, 1907. Mr. *Smith (Sault Ste. Marie)*. *Not printed.*

No. 58. . Return to an Order of the House of the twenty-fifth day of February, 1907, for a Return shewing all Estates now unsettled upon which Succession Duty was claimed by the Treasury Department where the due date was on or before the first day of January, 1905, and the estimated amount of duty due and the reasons why unsettled. Presented to the Legislature, 7th March, 1907. Mr. *Kerr*. *Not printed.*

No. 59. . Return to an Order of the House of the eighth day of March, 1907, for a Return shewing the amounts credited to the cities, towns, villages and organized townships in the Province of Ontario, from the sum received under Section 2, Subsection 5, of the Supplementary Revenue Act, 1899, as amended from time to time, and also the amount charged against each such city, town, village or organized township, respectively, for the maintenance of inmates of lunatic or other asylums in the Province under the provisions of Subsection 2, of Section 4, of Chapter 9 of the Statutes of 1906. Presented to the Legislature, 11th March, 1907. Mr. *Hislop*. *Not printed.*

No. 60 . Statement shewing cash expenditure on construction of the Temiskaming and Northern Ontario Railway, as of December 31st, 1906. Presented to the Legislature, 14th March, 1907. *Printed.*

No. 61. . Return to an Order of the House of the sixth day of March, 1907, for a Return of:—1. Copies of all correspondence between the Government, or any Member or Official thereof and any person or persons, relating to the cancellation or granting of a liquor license to the Palace Hotel, at Fort Frances. 2. Copies of all correspondence between the Government, or any Member or Official thereof and any person or persons, relating to the cancellation or granting of a liquor license to one Thomas Wilson, at Fort Frances 3. Copies of all correspondence between the Government, or any Member or Official thereof and any person or persons, relating to the resignation or dismissal of the License Inspector or any member of the Board of License Commissioners at Fort Frances. Presented to the Legislature, 20th March, 1907. Mr *McDougal*. *Not printed.*

No. 62. . Report of the Ontario Railway and Municipal Board upon certain Bills amending the Municipal Act *in re* the Conmee clauses, referred to the Board by the Standing Committee on Municipal Law, in the Session of 1906. Presented to the Legislature, 19th March, 1907. *Not printed.*

No. 63. . Report upon the Feeble-minded in Ontario. Presented to the Legisture, 15th April, 1907. *Printed.*

No. 64. . Return to an Order of the House of the eighth day of March, 1907. for a Return of copies of all correspondence and papers relating to or in the matter of the protest of Mr. Chisholm Livingstone and the Davis Estate, against the purchase price awarded them by the arbitrators for their property for the Queen Victoria Niagara Falls Park. Presented to the Legislature, 20th March, 1907. Mr. *Fraser*. *Not printed.*

No. 65. . Report upon the Horse Industry of Ontario, for the year 1906. Presented to the Legislature, 21st March, 1907. *Printed.*

No. 66. . Return to an Order of the House, of the first day of March, 1907, for a Return shewing the number of Mining Companies incorporated in the year 1906, also total amount paid into the Treasury Department from incorporation of Mining Companies in 1906, including licenses to companies previously incorporated. Presented to the Legislature, 21st March, 1907. Mr. *Pearce. Not printed.*

No. 67. . Return to an Order of the House, of the twenty-seventh day of February, 1906, for a Return shewing, according to Counties—1. How many persons held Commissions and were qualified as Justices of the Peace, within the Province, on the 7th day of February, 1905. 2. How many persons held Commissions on the 7th day of February, 1906. 3. How many persons were included in the General Commission of the Peace, issued by the present Government. 4. How many of the persons named in such General Commission were continued in office from previous Commissions. Presented to the Legislature, 21st March, 1907. Mr. *Ross. Not printed.*

No. 68. . Return to an Order of the House, of the seventh day of February, 1907, for a Return shewing:—1. The names of Counties which have adopted the "Alternative Method" of selecting Jurors under the Amendment of 1902 to the Jurors' Act. 2. For a Comparative Statement shewing the expenses incurred under the old and new system in said Counties from the years 1902 to 1906, both inclusive. 3. The Counties (if any) in which the "Alternative Method" has been repealed and have returned to the old system of selecting Jurors. Presented to the Legislature, 22nd March, 1907. Mr. *Hoyle. Not printed.*

No. 69. Return to an Order of the House, of the sixth day of March, 1907, for a Return of copies of all correspondence between the Government and the Northumberland-Durham Power Company, with respect to a lease of water power at Healey Falls. Presented to the Legislature, 3rd April, 1907. Mr. *Pense. Not printed.*

No. 70. . Return to an Order of the House, of the seventh day of February, 1907, for a Return, shewing the number and names of the settlers located in the Township of Gaudette and Hodgins in the District of Algoma, since the year 1906. Presented to the Legislature, 5th April, 1907. Mr. *Smith (Sault Ste. Marie). Not printed.*

No. 71. . Documents and correspondence regarding Petawawa Camp. Presented to the Legislature, 15th April, 1907. *Printed.*

No. 72. . Statement of distribution of Revised and Sessional Statutes. Presented to the Legislature, 17th April, 1907. *Not printed.*

No. 73. . Copy of a letter from His Honour A Constantineau, Judge of the Counties of Prescott and Russell, addressed to the Attorney-General of Ontario in the matter of the case Chatillon *vs.* Bertrand. Presented to the Legislature, 18th April, 1907. *Not printed.*

No. 74. . Return to an Order of the House of the twenty-second day of March, 1907, for a return of copies of all correspondence between the Nipissing Mines Company, or any Official thereof and the Government, or any Member thereof, relating to the property, or title thereto, of the said company, or any part or or parcel thereof situated in the Cobalt District; or to any application relating to the same; its title, or to the operation of the mines of the company, made by or on behalf of the company, or any of its Directors or Officers. Presented to the Legislature, 18th April, 1907. Mr. *McMillan, Not printed.*

HON. R. A. PYNE, M.D., LL.D.
Minister of Education, Ontario.

REPORT

OF THE

Minister of Education

Province of Ontario

FOR THE YEAR

1906

PART I

PRINTED BY ORDER OF
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THE LATE W. H. JENKINS, B. A.

Registrar of the Education Department, 1902—1907.

The Report of the Minister of Education for 1905 recorded the death of one who had been for many years closely identified with Educational work in the Province of Ontario, the late Deputy Minister, Mr. John Millar. This year another official, whose period of service had not been so long as Mr. Millar's, but whose work was ever highly appreciated, has been called to his reward, namely, Mr. William H. Jenkins, B. A., the Registrar of the Department, who died at his home in Madoc on the 25th of March, after a long illness borne with great fortitude, patience and cheerfulness.

Mr. Jenkins, the son of Wm. Jenkins, Esq., and grandson of the Rev. W. Jenkins, one of the pioneer ministers of the Presbyterian Church in Canada, was born in 1862 in the County of York, but when he was eight years of age his parents moved to Madoc. His early education was received in the public school of that town, then under the principalship of Mr. Geo. B. Kirk, and from this school he graduated with a second class certificate. He taught for four years in S. S. No. 10, Huntingdon, and afterwards spent six months in Hamilton Collegiate Institute. In the year 1885 he entered the University of Toronto, then attended the Ottawa Normal School, taught again for a short time and graduated in 1890 with First Class

Honours in Natural Science, and the Cawthorne Medal. In the same year he was appointed Science Master of Owen Sound Collegiate Institute, and three years later was appointed Principal, a position which he held for nine years. Under his management the Institute gained a foremost place among the secondary schools of Ontario. In 1902 he was chosen to succeed Dr. Pakenham as Registrar of the Education Department, an office of great responsibility, in which he showed not only his scholastic standing, but also a knowledge of men and affairs as well as much judgment, tact and administrative ability.

Mr. Jenkins' career was in all its stages most creditable, honourable and inspiring. Among High School teachers he was recognized as one of the most progressive and efficient. As a teacher of Science he had few equals, and he possessed in a marked degree the rare power of developing in his students a love of learning and of work. His work in the Department, which was much more varied, important and far-reaching in its character and influence than the title of his office would indicate, won for him the admiration and confidence of his official superiors, his colleagues, and all who were acquainted with it.

A man of high ideals, of remarkably alert and clear mind, of attractive personality and unsullied character, he was respected by all who knew him, and held in affectionate esteem by those who knew him intimately. A great author has said that " the best evidence of a man's fitness for any higher calling is the living up to his possibilities in that situation where he is, without regard to where he might better like to be." Few men more fully recognize the truth and wisdom of this statement and more quietly, cheerfully and courageously live up to it, than did Mr. Jenkins. In all the relations of life, as official, friend, son, husband and father he was *true*, and of him it might well be said,

"His life was gentle, and the elements
So mixed in him that Nature might stand up
And say to all the world, 'This was a man'."

Mr. Jenkins married Miss F. Tuller, of Madoc. His wife and two sons, as well as his aged father, survive him.

REPORT

OF THE

MINISTER OF EDUCATION

FOR THE YEAR 1906.

PART I

To the Honorable Wm. Mortimer Clark, K.C.,
Lieutenant-Governor of the Province of Ontario.

May it Please Your Honor:

I beg to present to Your Honor the first portion of the Report of the Department of Education for the year 1906.

The year that has just closed will always be noteworthy as the beginning of a period of reconstruction in the educational affairs of Ontario. It had been for some time evident that changes of a somewhat drastic character were needed in more than one branch of the Provincial system of education. Owing to various causes, some of them incident to the increase and displacement of population in certain parts of the country affecting the schools and the supply of teachers, others the consequence of the greater cost of providing adequate facilities in both higher and primary education, it was judged well to seek from the Legislature measures to modify in several important respects (1) the powers of administration exercised by the Department, (2) the basis of pecuniary support for the rural public schools, and (3) the system of control over the State University. There was involved in these proposals a considerable increase in the votes granted for purposes of education. It affords me great satisfaction to acknowledge the intelligence and generosity displayed by all parties in the Legislature in relation to these matters, and to record the gratifying proofs of interest and enthusiasm evinced by many, both within and outside the Legislature, in the reform and improvement of our educational system. The experience of other countries, with that of our own, goes to show that united effort is of the utmost value in so vital a matter as the training of the youthful population. Those who are charged with the duty of administering the system will fall short of what is required if they fail to secure the cordial support and encouragement of the whole community. The efforts now being made should be regarded as only the beginning of a movement to raise the standard of efficiency, for there remains much to be done, and further advances will depend in no slight measure upon the cooperation afforded by the people of the Province. During the year a large number of school boards have given proof of this spirit of enterprise by their policy in respect to increasing teachers' salaries, the improvement of equipment, and the construction of new buildings. I had an opportunity, during the recess, of visiting Great Britain, and of making some personal inquiry into the working of certain English schools, and the system of text-books in vogue there, and was impressed, as anyone

who has specially investigated the subject cannot fail to be, with the determination shown abroad by all educational authorities to make the schools responsive to the needs of the time and to spend lavishly if wisely in bringing this about. I have also had the pleasure of addressing a number of meetings in different parts of the Province attended by educationists, as well as others, for the purpose of discussing educational questions. On all these occasions the zeal and knowledge displayed by the local authorities were much to be commended, and I have little doubt, notwithstanding the onerous nature of the task before them, that the people of Ontario will be equal to their educational responsibilities as they have been equal to other important duties in times gone by.

Rural Schools.

That the task of meeting modern requirments in education is no light one cannot be denied. This is especially true of the rural schools which have, from one cause and another, been allowed to fall much below that standard of excellence which the people in the rural localities have a right to expect for their children. The amendments to the Public Schools Act passed at the last session of the Legislature were designed to meet the needs of these schools. The first duty was to provide larger pecuniary support. The legislative grant was increased, as well as the grants by the municipal authorities. The legislative grant for the rural schools was thus increased to $180,000, an amount by no means in proportion to the wealth and importance of a Province like Ontario, but considered to be a fair starting-point. It was designed that this larger pecuniary support should be devoted, first, to the payment of higher salaries to teachers, and to provide improved equipment in the schools. The attainment of these objects, as a prime consideration in educational policy, has met with general approval. The salaries of teachers in rural schools had become insufficient to induce young men and women to enter the teaching profession and to incur the expense of higher professional training where the compensatory advantages were so slight. The rapid settlement of the Western Provinces of Canada has also drawn away a considerable number of our experienced teachers. The salaries offered in the West were much in excess of the scale in Ontario, so that the Department of Education, in order to keep our own schools open, felt itself obliged to issue a greater number of temporary certificates than concern for the welfare of the schools could justify, provided such a condition were to last for any length of time. The objects sought by the legislation of last season should, therefore, be regarded as a principle from which a backward step must not be taken. The best means of accomplishing this desirable end are not in themselves inflexible or necessarily permanent. The machinery for enhancing and distributing the larger grants has now had a year's trial. Over the greater part of the Province it has been found to work well. From some quarters, however, have come protests that the plan devised is calculated to destroy the initiative spirit of trustee boards and thus eliminate one of the most valuable factors making for the improvement of education. To all these representations I have given, as it is my duty to do, the most careful consideration, and if such modifications of the law can be made as will provide for its smooth working, while at the same time safeguarding the objects in view, no objections can be raised to their incorporation in the Act. Hand in hand with increased compensation to teachers goes higher training, and for this purpose it is proposed to substitute Normal School for Model School training. The excellent work done in some of the model schools is encouraging, but it is felt that to secure

more efficient teaching the extension and modification of Normal School training is in accord with what is being done in other countries and will meet satisfactorily the conditions in Ontario. The addition of four new Normal Schools to the three already in existence will, it is believed, provide for the present the necessary number of teachers. The additional Normal Schools will be so situated as to serve conveniently the various parts of the Province, and also to provide the required practice-teaching in public schools of a successful character. Agreements have been made with the trustee boards of Hamilton, Stratford, Peterborough and North Bay for the use of public school classes under their respective jurisdictions. The erection of buildings for Normal Schools in these places will be at once proceeded with. The municipal authorities of Stratford, Peterborough and North Bay have generously presented to the Province the sites for these schools. Another departure in professional training which also places Ontario abreast of what is being done abroad, is the creation of a faculty of education in the state university of the Province to carry on the work hitherto conducted in the Normal College, but on lines more thorough and complete than any institution without the resources of a well-equipped university could be expected to develop. The appointment of a Professor of Education has been made by the Governors of the University, and pending the creation by the University of model, high and public schools under university control, the use of city schools for practice and observation purposes will be sought and I trust secured.

The Advisory Council.

The recent choice of members to form the first elective Advisory Council of Education marks another step in the reorganization of the system. By this a body representative of the various classes of educationists has been called into existence. The creation of the Advisory Council has long been discussed as a practical method for bringing the Minister of Education in close touch with the teaching profession and enabling him, whenever he desires, to seek in a regular and systematic manner the counsel and opinions of the various ranks of educationists. The Council is elected triennially and upon it are represented the Universities, the High Schools, the public schools and the separate schools and the inspectors, while two of its members are school trustees. In creating this body, the Legislature has carefully guarded the responsibility of the Minister, who is not to divide or evade his duties to the Legislature or the public, but is to continue responsible, as before, for the legislation and administration pertaining to education. The Council will be consulted from time to time on matters concerning which I feel that the advice of professional educationists will be helpful to the public advantage. My representative upon the Council, and the medium of official communications, is the Superintendent of Education. Concerning this office and its present occupant a word should be said. The appointment of a Superintendent, authorized by the Act of last session, is in harmony with the principle which underlies the present reconstruction of the educational system and is intended to afford the Department the constant assistance of professional experience and knowledge dissociated from the full administrative control which remains in the hands of the responsible Minister. The functions of the office of Superintendent being advisory and not executive, are exercised primarily with a view to the educational bearing of all questions submitted to him. The abstract merits of all educational problems thus receive due consideration, and I am glad to have, in this im-

portant work, the aid of Dr. John Seath, whose long connection with our school system and whose labors in behalf of education amply qualify him for the position of Superintendent. His report upon the educational questions now engaging the attention of the Department will be presented in due course.

Changes in the Staff.

There have been, during the year, a number of other changes in the personnel of the staff of the Department. The appointment of a Superintendent and the resignation of Mr. J. E. Hodgson, M.A., left vacant both the High School Inspectorships. The decision to promote continuation work called for the selection of an inspector to give the whole of his time and thought to that branch. The resignation, through ill-health, of the registrar occasioned a vacancy in that office. The Minister, therefore, finds himself surrounded by several new officials, who have been selected on the ground for their fitness and qualifications, and whose services he is glad to have at this juncture in educational affairs. For the High School inspectorships Mr. James E. Wetherell, B.A., Principal of the Strathroy Collegiate Institute, who has made his mark both in school management and in literary work, and Mr. H. B. Spotton, M.A., Principal of the Harbord Street Toronto Collegiate Institute, whose experience as principal and as a teacher in science are well known, were chosen. The appointment of Mr. R. H. Cowley, B.A., Inspector of Public Schools in the County of Carleton, as Inspector of Continuation Classes, was due to his special familiarity with this branch of work and to his record as a teacher and inspector. The Department loses an excellent official in the retirement of Mr. W. H. Jenkins, B.A., who has felt himself compelled, on account of ill-health, I regret to say, to relinquish the onerous duties of a sedentary occupation. His restoration to health will be hailed with satisfaction by his fellow-teachers throughout the Province. His successor, Mr. J. A. Houston, M.A., possesses both in respect to scholastic training and knowledge, the qualifications required in discharging the duties connected with the examination branch of the Department.

The University Act.

The year will also be memorable for the passage of the University Act, based on the report of a Royal Commission appointed the previous year. Of this Commission Mr. Joseph W. Flavelle was chairman, among the other members being Mr. Goldwin Smith, Sir William Meredith, Mr. Byron E. Walker, Rev. Canon Cody and Rev. D. Bruce Macdonald. The report of the Commission, which sat for several months and personally investigated the workings of the University constitutions of the United States, was accompanied by a draft bill. This, with certain modifications, was accepted as the basis of the legislation and was adopted unanimously by the Legislature. It vested the supreme control of the State University in a board of twenty governors nominated by the Crown, assigned to the institution an annual income equal to half the revenue received by the Province from succession dues, increased the powers of the President of the University, who becomes ex-officio a member of the governing board, and made such changes in the executive machinery as will, it is believed, greatly conduce to the welfare and efficiency of this great state institution. The measure also transferred the control of the School of Practical Science from the Department of Edu-

cation to the Board of Governors of the University, thus severing a connection which had lasted for more than thirty years. In heartily approving of this important change I did so with the conviction that the incorporation of the School in the University, of which it is now the Faculty of Applied Science, would greatly conduce to the welfare of both institutions. As a sharer in the enhanced income conferred upon the University by the Legislature, the School will be better able to perform those services for technical education now so earnestly desired by the people of Ontario. In the recommendations of the Commission on this head I concur, since the development of technical instruction in the schools of the Province calls for an effort not hitherto put forth if we are to keep pace, as an industrial community, with the training supplied to the youths of other countries.

The Cost of Text Books.

The appointment of a Commission consisting of Mr. T. W. Crothers, of St. Thomas, and Mr. John A. Cooper, of Toronto, to enquire into the prices of school text-books, touches a subject of much concern to the parents and taxpayers of the Province. The Commission has held open sittings, and with some of the evidence collected the public are already familiar through the reports in the press. The whole of the testimony was carefully recorded by stenographic reporters and constitutes a valuable body of information respecting the best methods of publishing text-books. The report of the Commission is being completed and will be presented to Your Honor at an early date. Action consistent with the information thus gained will be taken with a view to relieving the parent of unnecessarily high prices for text-books and with the aim of providing better books.

Training of the Blind and Deaf.

The two institutions under the control of this Department, namely the Ontario Institute for the Deaf and Dumb, at Belleville, and the Institution for the Education of the Blind, at Brantford, have had a prosperous year. The reports of the Principals of the two institutions are appended to this volume of my report. At the Institution for the Deaf and Dumb the health of the pupils has been good and the attendance of a larger number of new pupils is recorded. In the Principal's report are incorporated, from the writings of Dr. Love, the well-known aurist, who visited Belleville last year, and from other sources, some historical data respecting the progress in the training of deaf-mutes by reason of the scientific effort and philanthropic zeal shown in all civilized countries for the welfare of this class of the population. Mr. Mathison, who has retired from the Principalship of the Institute after many years of efficient service, carries with him the good will of all the teachers and pupils with whom he has been associated. His successor, Dr. C. B. Coughlin, brings to the work professional talents of a high order and a temperament well suited to promote the interests and happiness of those entrusted to his care. Mr. H. F. Gardiner, Principal of the Brantford Institution, makes a favorable report of the year's work, and presents an interesting account of the methods employed to train blind pupils for a useful place in life. A summary is also given of the proceedings of the Edinburgh Conference on the Blind last year at which practical addresses were delivered reflecting the latest views of competent authorities upon the instruction of the blind.

Conference of District Inspectors.

During the year, the conditions and requirements of the schools in the northern districts have been under the consideration of the Department. The Deputy Minister and the Superintendent of Education visited one portion of New Ontario for the purpose of personally inspecting the circumstances under which primary education is maintained there, and having reported in favor of a conference of all the district inspectors, such a conference was held in the month of November. The educational conditions in Northern Ontario are exceptional. The schools in many places are conducted under difficulties owing to the nature of settlement and the scarcity of teachers. As there is a rapid increase of population in certain areas, especially along the line of the Temiskaming and Northern Ontario Railway, it is manifestly the duty of the Legislature to encourage in every way possible the efforts of the people in those districts to provide schools for their children. It may be necessary to treat the educational problem in all our newer districts on lines somewhat different from those found to be suitably adapted to older Ontario. There is already a commendable zeal amongst the people themselves, and the Department is ready to second their efforts. There are now, according to the statistics just supplied by the Inspectors, 826 district schools, both public and separate. Of these, 85 are bi-lingual schools, which are divided into 55 public schools and 30 separate schools.

Statistics of Education.

The statistical information to be found appended to this report contains many details which illustrate educational conditions and mark educational progress. It has been thought well to present certain information not embodied in previous reports; such, for example, as separate statements respecting rural schools as distinct from urban schools; the qualifications of teachers in the several counties and districts; fuller statistics relative to kindergartens; the number of schoolrooms in each inspectorate; and comparative statistics of the United States and Ontario.

A summary of the statistics for 1905 shows that there were in Ontario in that year 5,793 public schools, 428 separate schools, and 140 high schools and collegiate institutes. The number of pupils was, respectively, 397,170, 49,324, and 28,661. The expenditures were: On public schools, $5,524,102; on separate schools, $637,134; on high schools, $1,004,498. The total expenditures were, therefore, $7,165,734. The number of teachers in the three classes of schools was 10,338. The salaries paid to teachers in rural schools show a tendency to increase, the average salary paid to male teachers in those schools having risen from $385 in 1904 to $402 in 1905, and the average paid to female teachers from $294 in 1904 to $311 in 1905.

R. A. Pyne,
Minister of Education.

Education Department,
Toronto, January, 1907.

SUMMARY OF STATISTICS.

1. Elementary Schools.

a. Public Schools.

Number of Public Schools in 1905		5,793
Increase for the year	35	
Number of enrolled pupils of all ages in the Public Schools during the year		397,170
Increase for the year	356	
Average daily attendance of pupils		232,077
Increase for the year	4,912	
Percentage of average attendance to total attendance		58.43
Increase for the year	1.18	
Number of persons employed as teachers (exclusive of Kindergarten and Night School teachers) in the Public Schools: men, 1,839; women, 6,840; total		8,679
Decrease: men, 118; increase, women, 187; total increase	69	
Number of teachers who attended Normal School		4,442
Decrease for the year	122	
Number of teachers with a University degree		77
Decrease for the year	9	
Average annual salary for male teachers		$514
Increase for the year	$29	
Average annual salary of female teachers		$348
Increase for the year	$13	
Average experience of male teachers		9.3 years
Average experience of female teachers		6.4 years
Amount expended for Public School houses (sites and buildings)		$715,761
Amount expended for teachers' salaries		$3,422,324
Amount expended for all other purposes		$1,386,017
Total amount expended on Public Schools		$5,524,102
Increase for the year	$570,920	
Cost per pupil (enrolled attendance)		$13.91
Increase for the year	$1.43	

b. Roman Catholic Separate Schools.

Number of Roman Catholic Separate Schools in 1905		428
Increase for the year	9	
Number of enrolled pupils of all ages		49,324
Increase for the year	1,517	
Average daily attendance of pupils		32,030
Increase for the year	2,110	
Percentage of average attendance to total attendance		64.94
Increase for the year	2.36	
Number of teachers		970
Increase for the year	26	
Amount expended for School houses (sites and buildings)		$243,366
Amount expended for teachers' salaries		$246,906
Amount expended for all other purposes		$146,862
Total amount expended on R. C. Separate Schools		$637,134
Increase for the year	$130,823	

Cost per pupil (enrolled attendance)		$12.92
Increase for the year	$2.33	

c. Protestant Separate Schools.

Number of Protestant Separate Schools (included with Public Schools, *a*) in 1905		5
Number of enrolled pupils		320
Increase for the year	1	
Average daily attendance of pupils		192

d. Kindergartens.

Number of Kindergartens in 1905		133
Increase for the year	4	
Number of pupils enrolled		12,480
Increase for the year	459	
Average daily attendance of pupils		4,955
Increase for the year	382	
Number of teachers engaged		260
Increase for the year	5	

e. Night Schools.

Number of Night Schools in 1905-6		10
Decrease for the year	1	
Number of pupils enrolled		620
Decrease for the year	82	
Average daily attendance of pupils		286
Increase for the year	13	
Number of teachers engaged		17
Decrease for the year	2	

II. Secondary Schools.*

a. High Schools.

Number of High Schools (including 42 Collegiate Institutes) in 1905		140
Increase for the year	2	
†Number of Teachers in High Schools		689
Increase for the year	28	
Number of pupils enrolled in High Schools		28,661
Increase for the year	952	
Average daily attendance of pupils		17,567
Increase for the year	837	
†Average annual salary, Principals		$1,270
Increase for the year	$24	
†Average annual salary, Assistants		$927
Increase for the year	$33	
†Average annual salary		$997
Increase for the year	$30	
†Highest salary paid		$3,000

*The Curriculum of Secondary Schools includes all the subjects required for matriculation into the University.

†These statistics are based on Returns to the Department, dated January, 1906.

Amount expended for High School teachers' salaries.....		$666,547
Amount expended for High School houses (sites and buildings)		$103,515
Amount expended for all other High School purposes...		$234,436
Total amount expended on High Schools		$1,004,498
Increase for the year	$127,411	
Cost per pupil (enrolled attendance)		$35.05
Increase for the year	$3.40	
Cost per pupil (average attendance)		$57.18
Increase for the year	$4.76	

b. Continuation Classes.

Number of Continuation Classes, 1905-6 (included in Public and Separate Schools, I, *a* and *b*), practically doing High School work: Grade A, 88; Grade B, 41; Grade C, 100; Grade D, 200; total		429
Increase for the year: Grade A, 10; Grade B, 2; Decrease, Grade C, 38; Grade D, 27 Total decrease for the year	53	
Number of pupils in attendance		5,224
Decrease for the year	125	

III. General.

Elementary and Secondary Schools.

Total population of the Province, 1905		*2,226,933
Pupils enrolled in Elementary and Secondary Schools		488,255
Increase for the year	3,202	
Average daily attendance		286,915
Increase for the year	8,254	
Percentage of total population enrolled		21.92
Average length of school term in days		198.46
Average number of days attended by each pupil enrolled...		116.62

Average cost per pupil (enrolled attendance) in all schools:

	1902.	1903.	1904.	1905.
Sites and buildings	$0.97	$0.98	$1.30	$2.18
Teachers' salaries	7.63	7.94	8.44	8.88
All other expenses	2.80	3.14	3.32	3.62
For all purposes	$11.40	$12.06	$13.06	$14.68

Average cost per pupil (average attendance) in all schools:

	1902.	1903.	1904.	1905.
Sites and buildings	$1.70	$1.70	$2.26	$3.70
Teachers' salaries	13.34	13.84	14.69	15.11
All other expenses	4.89	5.47	5.79	6.16
For all purposes	$19.93	$21.01	$22.74	$24.97

*Estimated.

COMPARATIVE SCHOOL STATISTICS, 1867-1905.

I. PUBLIC SCHOOLS (INCLUDING SEPARATE SCHOOLS).

These tables, 1, 2, 3, 4, and 5, for the purpose of comparison with previous years in which the R. C. Separate Schools were included with Public Schools, include R. C. Separate Schools. In the Statistical Tables, A, B, C, D, E, (Appendix A), the Separate Schools are excluded.

1.—School Population—Attendance.

The School population of the Province, as ascertained by the assessors, is given in the third column of following table:

Year.	School age.	School population.	Pupils enrolled under 5.	Pupils enrolled 5 to 21.	Pupils enrolled over 21.	Total number of enrolled pupils.	Average daily attendance.	Percentage of average attendance to total number attending school.
1867	5—16	447,726	.....	*a*380,511	*b*21,132	401,643	163,974	40.82
1872	5—16	495,756	.....	*a*433,664	*b*20,998	454,662	188,701	41.50
1877	5—16	494,804	1,430	488,553	877	490,860	217,184	44.25
1882	5—16	483,817	1,352	469,751	409	471,512	214,176	45.42
1887	5—21	611,212	1,569	491,242	401	493,212	245,152	49.71
1892	5—21	595,238	1,636	483,643	391	485,670	253,830	52.26
1897	5—21	590,055	1,385	480,120	272	482,777	273,544	56.66
1902	5—21	584,512	1,001	452,977	110	454,088	261,480	57.58
1904	5—21	576,537	790	443,729	102	444,621	257,085	57.82
1905	5—21	578,032	814	445,601	79	446,494	264,107	59.15

a 5—16. *b* Other ages than 5 to 16. Note.—Kindergarten and Night School pupils are not included in above table.

It will be seen by the figures given in the above table that the School population and the School attendance throughout the Province have declined every quinquennial period from the year 1887 to 1902 and up to and including 1904, whilst last year a considerable increase is shown over the preceding year. Another feature of these statistics that shows well for these schools is the increase in the percentage of average to total attendance—from 57.82 to 59.15 per cent. This increase of 1,873 in the enrollment and 7,022 in the average daily attendance of the Province was brought about through the quite large increases in the urban municipalities, as the attendance is still declining in the rural localities as shown in the following table. It will there be noticed that the rural attendance in 1904 decreased by 7,484 from 1903, while that in 1905 decreased by only 2,475 from 1904, showing that the drain from the rural parts has appreciably diminished.

Year.	Attendance in Rural Schools.	Attendance in Urban Schools.
1903	260,617 or 57.88% of total	189,661 or 42.12% of total
1904	253,133 or 56.93% of total	191,488 or 43.07% of total
1905	250,658 or 56.14% of total	195,836 or 43.86% of total

2.—Classification of Pupils.

Year.	1st Reader—Parts I and II.	2nd Reader.	3rd Reader.	4th Reader.	5th or High School Reader.	Writing.	Arithmetic.	Drawing.
1867	79,365	98,184	83,211	68,896	71,987	231,734	241,501	5,450
1872	160,828	100,245	96,481	67,440	29,668	322,688	327,218	57,582
1877	153,630	108,678	135,824	72,871	19,857	396,006	402,248	153,036
1882	165,834	106,229	117,352	71,740	10,357	398,401	419,557	176,432
1887	192,361	100,533	108,096	81,984	10,238	466,389	469,445	395,097
1892	187,947	96,074	99,345	88,934	13,370	465,516	470,813	435,239
1897	181,375	91,330	99,682	89,314	21,076	465,525	471,869	448,444
1902	176,503	85,732	90,630	83,738	17,485	445,316	449,573	434,030
1904	169,981	85,229	90,111	83,104	16,196	439,040	440,314	426,612
1905	170,253	84,289	90,170	85,469	16,313	446,494	446,494	392,539

Year.	Geography.	Music.	Physiology and Hygiene.	English History.	Canadian History.	Composition.	Grammar.
1867	272,173	47,618	.....	*61,787	.....	147,412	147,412
1872	327,139	110,083	.....	47,019	37,339	105,512	176,644
1877	375,951	168,942	.....	59,694	43,401	226,977	226,977
1882	280,517	158,694	33,926	*150,989	.....	209,184	209,184
1887	316,791	203,567	71,525	94,830	114,141	270,856	270,856
1892	334,947	220,941	171,594	106,505	147,451	294,331	294,331
1897	342,189	233,915	215,343	114,398	169,627	316,787	316,787
1902	318,755	268,356	194,459	106,282	163,672	296,172	296,172
1904	323,101	266,992	215,421	115,342	171,823	305,829	305,829
1905	326,657	272,725	228,760	128,350	183,456	334,070	237,023

The following table classifies the pupils in the various Readers in 1904 and 1905, as to Rural and Urban Schools.

Rural Schools.	First Reader Part I.	First Reader Part II.	Second Reader.	Third Reader.	Fourth Reader.	Fifth or High School Reader.	Totals.
1904	60,784	36,941	47,930	50,297	47,289	9,892	253,133
1905	61,102	35,155	46,995	50,076	47,709	9,621	250,658
Urban Schools (cities, towns, and incorporated villages).							
1904	44,456	27,800	37,299	39,814	35,815	6,304	191,488
1905	46,850	27,146	37,294	40,094	37,760	6,692	195,836

* History.

3.—Teachers' Certificates.

Year.	Public school teachers.	Male.	Female.	1st class.	2nd class.	3rd class.	Other certificates, including old County Board, etc.	Number of teachers who attended Normal School.
1867	4,890	2,849	2,041	1,899	2,454	386	151	666
1872	5,476	2,626	2,850	1,337	1,477	2,084	578	828
1877	6,468	3,020	3,448	250	1,304	3,926	988	1,084
1882	6,857	3,062	3,795	246	2,169	3,471	971	1,873
1887	7,594	2,718	4,876	252	2,553	3,865	924	2,434
1892	8,480	2,770	5,710	261	3,047	4,299	873	3,038
1897	9,128	2,784	6,344	343	3,386	4,465	924	3,643
1902	9,367	2,294	7,073	608	4,296	3,432	1,031	4,774
1904	9,554	2,075	7,479	635	4,192	3,396	1,331	4,728
1905	9,649	1,950	7,699	661	4,018	3,248	1,722	4,620

NOTE.—Kindergarten and Night School teachers are not included in above table.

It is to be regretted that the number of men in the teaching profession is still decreasing, as shown in preceding table. The percentage in 1904 was 21.72 and in 1905 it had declined to 20.21.

Another decrease in the number of permanent certificates and a great increase in the number of temporary certificates, under the hading "Other certificates," is noticed. The increased salaries in the rural schools in accordance with the schedule of the amended School law of last session will no doubt be a strong inducement to keep our teachers with permanent certificates from going to the West, and consequently avoid the necessity of issuing so many temporary certificates.

The number of the teachers and the class of the certificates in each county of the Province will be found on pages 12-14 of this Report.

Seventy-seven Public School teachers held University degrees in Arts, a decrease of 9 from the preceding year 1904.

The following table classifies the teachers and certificates as to Rural and Urban Schools, in 1904 and in 1905.

	Public School Teachers.			Certificates.			
	Total.	Male.	Female.	1st Class.	2nd Class.	3rd Class.	Other Class.
Rural Schools, 1904	5,974	1,469	4,505	152	1,944	3,107	771
Rural Schools, 1905	6,007	1,354	4,653	146	1,752	2,969	1,140
Urban (cities, towns and incorporated villages) 1904	3,580	606	2,974	483	2,248	289	560
Urban, 1905	3,642	596	3,046	515	2,266	279	582

4.—Teachers' Salaries and Experience.

Teachers' Salaries.

Year.	Highest salary paid.	Average salary, male teacher, province.	Average salary, female teacher, province.	*Average salary, male teacher, rural schools.	*Average salary, female teacher, rural schools.	Average salary, male teacher, cities.	Average salary, female teacher, cities.	Average salary, male teacher, towns.	Average salary, female teacher, towns.	Average salary, male teacher, incorporated villages.	Average salary, female teacher, incorporated villages.
	$	$	$	$	$	$	$	$	$	$	
1867	1,350	346	226	261	189	532	243	464	240	.....	.....
1872	1,000	360	228	365	213	628	245	507	216	.....	.....
1877	1,100	398	264	379	251	735	307	583	269	.....	.....
1882	1,100	415	269	385	248	742	331	576	273	.....	.....
1887	1,450	425	292	398	271	832	382	619	289	.....	.....
1892	1,500	421	297	383	269	894	402	648	298	.....	.....
1897	1,500	391	294	347	254	892	425	621	306	.....	.....
1902	1,600	436	313	372	271	935	479	667	317	.....	...
1904	1,600	485	335	385	294	953	498	705	341	564	305
1905	1,600	514	348	402	311	1,003	503	746	344	592	316

* Incorporated villages included from 1867 to 1902, inclusive.

Teachers' salaries, though still far too low, are on the increase, as shown in above table. For the first time the salaries for purely Rural Schools are given therein (1904 and 1905). Formerly incorporated villages were included with the counties.

In Table C, pages 12-15, the salaries and experience of teachers of the various counties is given separately and summarized for the cities, towns and villages. The experience of the teachers of the Province has never been compiled before, and will no doubt be found interesting and suggestive. The following is a summary of the table above mentioned so far as it relates to teachers' experience:

Teachers' Experience.

	Number of teachers who have taught less than 1 year.	1 but less than 2 years.	2 but less than 4 years.	4 but less than 7 years.	7 but less than 12 years.	12 but less than 20 years.	20 years and over.	Average experience in years of male teachers.	Average experience in years of female teachers.	Average experience in years of all teachers.
Rural schools	384	1,195	1,737	1,138	730	334	176	6.9	4.1	4.7
Cities	37	64	97	218	264	360	295	14.8	11.9	12.4
Towns	21	32	127	235	300	243	169	17.1	10.1	11.3
Villages	16	35	101	120	111	79	61	13.4	7.5	9.1
Totals, Province	458	1,326	2,062	1,711	1,405	1,016	701	9.3	6.4	7.0
Percentages	5.28	15.28	23.76	19.71	16.19	11.71	8.07	.....	.....	.....

NOTE.—R. C. Separate School teachers are not included in above table.

5.—Receipts and Expenditure.

Year.	Receipts.				Expenditure.					
	Legislative grants.	Municipal School grants and assessments.	Clergy reserve funds, balances and other sources.	Total receipts.	Teachers' salaries.	Sites and building school houses.	Libraries, maps, apparatus, prizes, etc.	Rent, repairs, fuel and other expenses.	Total expenditure.	Cost per pupil.
	$	$	$	$	$	$	$	$	$	$ c.
1867	187,153	1,151,583	331,599	1,670,335	1,093,517	149,195	31,354	199,123	1,473,189	3 67
1872	225,318	1,763,492	541,460	2,530,270	1,371,594	456,043	47,799	331,928	2,207,364	4 85
1877	251,962	2,422,432	730,687	3,405,081	2,038,099	477,393	47,539	510,458	3,073,489	6 26
1882	265,738	2,447,214	757,038	3,469,990	2,144,449	341,918	15,583	525,025	3,026,975	6 42
1887	268,722	3,084,352	978,283	4,331,357	2,458,540	544,520	27,509	711,535	3,742,104	7 59
1892	283,791	3,300,512	1,227,590	4,811,899	2,752,629	427,321	40,003	833,965	4,053,918	8 40
1897	366,538	3,361,562	1,260,055	4,988,155	2,886,061	391,689	60,585	877,335	4,015,670	8 73
1902	383,666	3,959,912	1,422,92	5,766,50	3,198,132	432,753	86,723	1,107,552	4,825,160	10 62
1904	405,362	4,464,227	1,600,982	6,470,571	3,473,710	578,656	87,997	1,319,130	5,459,493	12 27
1905	414,004	4,928,790	1,886,400	7,229,194	3,669,230	959,127	98 209	1,434,670	6,161,236	13 80

Considerable increases in Government and municipal grants and in the expenditure of the Public and Separate Schools are again noticed in the preceding comparative table. The expenditure increased from $12.27 in 1904 to 13.80 in 1905 per pupil of enrolled attendance, and from $21.23 to $23.32 per pupil of average attendance as shown in the following table:

Average cost per pupil (enrolled attendance).

	1902.	1903.	1904.	1905.
Sites and buildings	$0.95	$0.95	$1.30	$2.15
Teachers' salaries	7.04	7.35	7.81	8.22
All other expenses	2.63	2.97	3.16	3.43
For all purposes	$10.62	$11.27	$12.27	$13.80

Average cost per pupil (average attendance).

	1902.	1903.	1904.	1905.
Sites and buildings	$1.65	$1.65	$2.25	$3.63
Teachers' salaries	12.23	12.72	13.51	13.89
All other expenses	4.57	5.14	5.47	5.80
For all purposes	$18.45	$19.51	$21.23	$23.32

The cost per pupil (enrolled attendance) for 1905 in the Public Schools alone will be found on pages 24 and 25 of this Report, and for the R. C. Separate Schools on pages 28 and 29. The expenditure will there be shown as to Rural Schools, cities, towns and villages, separately.

II. ROMAN CATHOLIC SEPARATE SCHOOLS.

Year.	Schools—Expenditure—Teachers.				Number of pupils attending—Number in the various branches of instruction.									
	Schools open.	Total receipts.	Total expenditure.	Teachers.	Pupils.	Writing.	Arithmetic.	Geography.	Composition.	Grammar.	Drawing.	Physiology and Hygiene.	English History.	Canadian History.
1867	161	$48,628	$42,719	210	18,924	10,749	10,559	8,666	.....	5,688	.....	.....	*2,571	.....
1872	171	68,810	61,817	254	21,406	13,699	12,189	8,011	7,908	7,908	.....	.....	*3,548	.....
1877	185	120,266	114,806	334	24,952	17,932	17,961	13,154	11,174	11,174	.....	.....	*9,812	.....
1882	190	166,739	154,340	390	26,148	21,052	21,524	13,900	11,695	11,695	7,548	2,033	*10,124	.....
1887	229	229,848	211,223	491	30,373	27,824	28,501	19,608	18,678	18,678	21,818	8,578	5,076	7,931
1892	312	326,034	289,838	662	37,466	35,565	25,936	26,299	22,755	22,755	32,682	11,056	6,713	11,483
1897	340	335,324	302,169	752	41,620	39,724	40,165	27,471	26,071	26,071	36,462	18,127	6,828	13,134
1902	391	485,562	435,441	870	45,964	45,964	45,964	29,788	27,409	27,409	41,952	14,687	7,544	15,035
1904	419	559,635	506,311	944	47,807	47,807	47,807	32,483	31,382	31,382	43,866	23,716	9,226	16,946
1905	428	693,991	637,134	970	49,324	49,324	49,324	34,205	32,201	25,526	39,501	23,909	10,732	18,593

*History.

Increases in the number of Schools, in the expenditure per pupil, from $10.59 in 1904 to $12.92 in 1905, in the number of pupils attending, and in the various subjects, are shown in the table above in reference to the Roman Catholic Separate Schools of the Province.

III. PROTESTANT SEPARATE SCHOOLS.

The following is a complete list of the Protestant Separate Schools of the Province:—No. 9, Cambridge; No. 6, Plantagenet North; No. 1, North Tilbury, L'Orignal, and Penetanguishene.

They were attended by 320 pupils. The whole amount expended for their maintenance was $4,027.02. One teacher held a First Class, two teachers held a Second Class, four a Third Class, and one a Temporary Certificate.

IV. COLLEGIATE INSTITUTES AND HIGH SCHOOLS.

The following statistics respecting Collegiate Institutes and High Schools will be found suggestive:

1.—Receipts, Expenditure, Attendance, etc.

Year.			Receipts.			Expenditure.					Cost per pupil.
	Schools open.	Teachers.	Amount of fees.	Legislative grant.	Total receipts.	Paid for teachers' salaries.	Paid for sites and building school houses.	Total expenditure.	Pupils.	Percentage of average attendance to total attendance.	
			$	$	$	$	$	$			$
1867	103	159	15,605	54,562	139,579	94,820	*19,190	124,181	5,696	55	21 80
1872	104	239	20,270	79,543	223,269	141,812	*31,360	210,005	7,968	56	26 36
1877	104	280	20,753	78,762	357,521	211,607	*51,417	343,710	9,229	56	37 24
1882	104	332	29,270	84,304	373,150	253,864	*19,361	343,720	12,348	53	27 56
1887	112	398	56,198	91,977	529,323	327,452	*73,061	495,612	17,459	59	28 38
1892	128	522	97,273	100,000	793,812	472,029	*91,108	696,114	22,837	60	30 48
1897	130	579	110,859	101,250	767,487	532,837	*46,627	715,976	24,390	61	29 35
1902	134	593	105,801	112,650	832,853	547,402	44,246	769,680	24,472	58.97	31 45
1904	138	661	116,758	120,799	960.867	620,710	50,512	877,087	27,709	60.38	31 65
1905	140	689	128,886	154,953	1,096,266	666,547	103,515	1,004,498	28,661	61.29	35 05

*Expenses for repairs, etc., included.

The expenditure per pupil of enrolled attendance in the High Schools increased from $31.65 in 1904 to $35.05 in 1905. The attendance is still on the increase, and when that at the Continuation Classes is considered, the increase in the number taking up secondary education is quite marked. 6.94 per cent. of the enrolled attendance of the Province is so engaged and about 20 per cent. of those who reach the Fourth Reader extend their course to the secondary schools.

Average cost per pupil (enrolled attendance) per year:

	1902.	1903.	1904.	1905.
Sites and buildings	$1.81	$1.89	$1.82	$3.61
Teachers' salaries	22.37	22.22	22.40	23.26
All other expenses	7.27	7.61	7.43	8.18
For all purposes	$31.45	$31.72	$31.65	$35.05

Average cost per pupil (average attendance) per year:

	1902.	1903.	1904.	1905.
Sites and buildings	$3.07	$3.18	$3.02	$5.89
Teachers' salaries	37.93	37.31	37.10	37.94
All other purposes	12.34	12.78	12.30	13.35
For all purposes	$53.34	$53.27	$52.42	$57.18

2.—Classification of Pupils, etc.

	English.						Mathematics.				Science.		
Year.	English Grammar.	English Composition.	Poetical Literature.	Geography.	Canadian History.	British History.	Arithmetic and Mensuration.	Algebra.	Geometry.	Trigonometry.	Physics.	Chemistry.	Botany.
1867	5,467	4,091	.....	5,264	.....	†4,634	5,526	2,841	1,847	141	1,876	840	.....
1872	7,884	7,278	.....	7,715	.....	†7,513	7,834	6,033	2,592	174	1,921	1,151	.....
1877	8,819	8,772	.....	9,158	.....	†9,106	9,227	8,678	8,113	359	2,168	2,547	.....
1882	12,275	12,189	.....	12,306	.....	†12,220	12,261	11,742	11,148	397	2,880	2,522	.....
1887	17,086	17,171	16,649	16,962	.....	†17,010	16,939	16,904	14,839	1,017	5,265	3,411	4,640
1892	22,530	22,525	22,468	22,118	.....	†22,328	21,869	22,229	17,791	1,154	6,601	3,710	6,189
1897	19,591	24,195	24,176	13,747	18,318	20,304	19,798	24,105	16,788	1,652	11,002	5,489	12,892
1902	21,576	24,241	23,768	14,500	14,768	16,817	21,594	22,953	16,881	1,662	12,758	5,860	9,051
1904	25,019	27,298	*27,070	18,493	19,014	21,520	25,249	25,143	20,519	1,759	17,837	9,038	11,463
1905	25,399	27,667	*27,775	22,003	22,566	23,975	25,455	23,847	22,123	1,913	21,901	12,413	13,569

* English Literature. † History.

2.—Classification of Pupils, etc.—*Continued.*

Year.	Languages.				Drawing (Art).	Bookkeeping.	Left for mercantile life.	Left for agriculture.	Who joined a learned profession.	Who became school teachers.	Number of schools charging fees.	Number of free schools.
	Latin.	Greek.	French.	German.								
1867.....	5,171	802	2,164	.....	676	1,283	.....	.....	.....	.....	67	36
1872.....	3,860	900	2,828	341	2,176	3,127	486	300	213	.....	28	76
1877.....	4,955	871	3,091	442	2,755	3,621	555	328	564	.....	35	69
1882.....	4,591	815	5,363	962	3,441	5,642	881	646	751	.....	37	67
1887.....	5,409	997	6,180	1,350	14,295	14,064	1,141	882	791	.....	58	54
1892.....	9,006	1,070	10,398	2,796	16,980	16,700	1,111	1,006	398	1,527	77	51
1897.....	16,873	1,421	13,761	5,169	12,252	11,647	1,368	1,153	409	2,056	87	43
1902.....	18,884	631	13,595	3,280	10,721	11,334	1,573	743	705	1,238	82	52
1904.....	19,409	637	16,039	3,274	11,596	13,334	1,834	811	739	1,240	82	56
1905.....	19,409	603	16,430	3,366	13,641	13,152	1,949	859	861	1,305	83	57

The occupations of the parents of all pupils enrolled in the High Schools and Collegiate Institutes are shown below, as well as the percentage of the whole in each class of the Province deriving advantages from those secondary schools:

Classes.	No. in each Class.	Percentage.
Agricultural	8,386	29.20
Commercial	7,491	26.14
Mechanical	6,303	21.99
Professional	2,680	9.36
Laboring occupations	2,151	7.55
Other callings	1,650	5.76

The statistics in detail of the various Collegiate Institutes and High Schools in the Province will be found on pages 34 to 57 of this Report.

V. DEPARTMENTAL EXAMINATIONS, ETC.

1.—Table showing the Number of Teachers in Training at County Model Schools, Normal College, Provincial Normal Schools, etc., 1877-1905.

Year.	County Model Schools.			Normal College.			Normal and Model Schools, etc.					
	No. of Schools.	No. of teachers in training.	No. that passed final examination.	No. of teachers.	No. of students admitted.	Receipts from fees of Normal College	No. of Normal School teachers.	No. of Normal School students admitted	No. of Model School and Kindergarten teachers.	No. of Model School and Kindergarten pupils.	Receipt from fees of Normal Schools, Model Schools and Kindergarten pupils.	Expenditure, Normal and Model Schools.
						$ c.					$ c.	$ c.
1877.....	50	1,146	1,124	.....	.....	.....	13	257	8	643	7,909 22	25,780 88
1882.....	46	882	837	.....	.....	.....	16	260	15	799	13,783 50	44,888 02
1887.....	55	1,491	1,376	.....	.....	.....	13	441	18	763	16,427 00	40,188 66
1892.....	59	1,283	1,225	10	96	1,630 00	12	428	22	842	19,016 00	45,724 12
1897.....	60	1,645	1,384	12	180	4,374 00	13	407	23	832	18,797 59	46,390 91
1902.....	54	1,171	1,138	15	132	2,405 00	16	619	31	958	20,735 00	56,672 98
1904.....	57	1,122	1,097	17	166	2,775 00	*25	304	36	982	20,212 00	64,999 19
1905.....	55	1,209	1,186	16	170	2,965 00	*27	306	36	1,023	21,794 00	67,091 63

*Including those engaged in both a Normal and a Model School.

2.—Entrance Examinations, 1877-1906.

	No. of candidates examined.	No. of candidates who passed.
1877	7,383	3,836
1882	9,607	4,371
1887	16,248	9,364
1892	16,409	8,427
1897	16,384	10,502
1902	18,087	13,300
1904	19,774	14,632
1905	20,295	13,431
1906	21,710	13,819

3.—Non-professional Teachers and Matriculation Examinations, 1906.

	District Certificate.	Part II. Junior Teachers.	Part I. Senior Teachers.	Part II. Senior Teachers.	Junior Matriculation, including Scholarship.	Commercial Specialist.	Art Specialist.
No. candidates	302	2,860	725	667	2,682	8	†10
No. who passed	134	1,540	425	406	*	3	4
No. of appeals	6	206	45	47	35	.....	.....
No. sustained	1	59	14	16	7	.....	.....

NOTE—(*a*) The Part I. Junior Leaving Examination was abolished in 1902.
(*b*) In Junior Matriculation column above, 144 scholarship candidates are included.
(*c*) The Commercial Diploma Part II. was abolished in 1904.
* Owing to changes in matriculations the number who passed is not known
† First examination held in 1906.

VI. TEACHERS' INSTITUTES.

This table presents the work of the Teachers' Institutes for twenty-nine years:

Year.	No. of Teachers' Institutes	No. of Members.	No. of Teachers in the Province.	Receipts.				Expenditure.	
				Amount received from Government grants.	Amount received from municipal grants.	Amount received from members' fees.	Total amount received.	Amount paid for libraries.	Total amount paid.
				$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1877	42	1,181	6,468	1,412 50	100 00	299 75	2,769 44	.....	1,127 63
1882	62	4,395	6,857	2,900 00	300 00	1,088 84	9,394 28	453 02	5,355 33
1887	66	6,781	7,594	1,800 00	1,879 45	730 66	10,405 95	1,234 08	4,975 50
1892	69	8,142	8,480	1,950 00	2,105 00	875 76	12,043 54	1,472 41	6,127 46
1897	73	7,627	9,128	2,425 00	2,017 45	901 15	12,446 20	1,479 88	6,598 84
1902	77	8,515	9,367	2,515 00	1,877 50	1,171 80	13,171 26	1,437 18	7,188 45
1904	79	8,979	9,554	2,575 00	2,134 45	1,328 45	13,342 11	1,050 22	7,229 06
1905	80	8,958	9,649	2,525 00	1,937 00	1,230 65	13,604 57	1,054 01	7,615 19

See pages 62 to 64 for details for 1905.

VII. COMPARATIVE SCHOOL STATISTICS OF ONTARIO AND THE UNITED STATES.

These tables give statistics of the primary and secondary schools of the divisions, North Atlantic, South Atlantic, South Central, North Central, and Western of the United States, of that country as a whole, and of the Province of Ontario. The headings to the tables are explanatory of the figures given in each case.

1.—Percentage of the total population enrolled; Number attending daily for each 100 enrolled.

	Percentage of total population enrolled.	Number attending daily for each 100 enrolled.
United States	20.01	69.92
North Atlantic Division	17.08	74.56
South Atlantic Division	20.99	64.69
South Central Division	21.22	64.12
North Central Division	21.11	71.04
Western Division	21 31	71.66
Ontario	21.92	59.28

2.—Teachers' Salaries.

	Average monthly salaries of teachers.	
	Male.	Female.
	$ c.	$ c.
United States	*50.96	*41.54
North Atlantic Division	*67.55	*43.57
South Atlantic Division	*32 12	*29.51
South Central Division	*43.51	*35.77
North Central Division	54.54	42.30
Western Division	70.98	56.42
Ontario	†63.39	†35.64

*Average for those States reporting salaries. †Allowing 10 months to the school year.

3.—Number and sex of Teachers; Percentage of Male Teachers.

	Whole number of different teachers employed			Percentage of male teachers.				
	Male.	Female.	Total.	1870-71	1879-80	1889-90	1899-1900	1903-4
United States	113,744	341,498	455,242	41.0	42.8	34.5	29.9	25.0
North Atlantic Divis'n	17,283	95,873	113,156	26-2	28.8	20.0	18.4	15.3
South Atlantic Divis'n	18,332	34,191	52,523	63.8	62.5	49.1	40.7	34.9
South Central Division	28,654	40,149	68,803	67.5	67.2	57.5	47.4	41.7
North Central Division	43,678	148,606	192,284	43.2	41.7	32.4	28.3	22.7
Western Division	5,797	22,679	28,476	45.0	40.3	31.1	24.7	20.4
				1870–	1880–	1890–	1900–	1905–
Ontario	2,478	8,137	10,615	54.8	50.5	36.3	30.4	23.3

4.- The School revenue compared with the School population and the adult male population (21 years and upward); Percentage analysis of the School revenue.

	Amount raised for each person 5 to 18 years of age.	Amount raised per adult male.	Amount each adult male must contribute to provide $1 for each person 5-18 years.	Per cent. of the whole revenue derived from—		
				State Taxes.	Local Taxes.	All other sources.
	$ c.	$ c.	$ c.			
United States	12 12	12 35	1 02	15.25	69.22	15.53
North Atlantic Division	20 46	16 79	82	12.47	69.72	17.81
South Atlantic Division	4 48	5 96	1 33	33.17	52.48	14.35
South Central Division	3 94	5 39	1 37	38.81	40.73	20.46
North Central Division	13 68	13 47	98	8.49	78.05	13.46
Western Division	20 70	14 66	71	27.80	61.40	10.80
Ontario	11 33	12 41	1 10	*6.43	67.58	25.99

* Government grants.

5.—Expenditure per pupil (based on average attendance); Average daily expenditure per pupil; Percentage analysis of School expenditure.

	Expenditure per capita of average attendance.				Average daily expenditure per pupil.		Per cent. of total expenditure devoted to—		
	For sites, buildings, etc.	For salaries.	For all other purposes.	Total per pupil.	For salaries.	Total.	Sites, buildings, etc.	Salaries.	All other purposes.
	$ c.	$ c.	$ c.	$ c.	Cents.	Cents.			
United States	4 37	14 83	4 94	24 14	10.1	16.5	18.1	61.4	20.5
North Atlantic Division	8 32	20 53	7 90	36 75	11.6	20.8	22.6	55.9	21.5
South Atlantic "	1 20	7 81	1 56	10 57	6.7	9.0	11.3	73.9	14.8
South Central "	98	7 44	1 16	9 58	6.9	8.9	10.2	77.6	12.2
North Central "	4 05	16 07	5 58	25 70	10.3	16.4	15.8	62.5	21.7
Western "	7 01	21 12	7 53	35 66	14.3	24.1	19.7	59.2	21.1
Ontario	3 70	15 11	6 16	24 97	7.6	12.6	14.8	60.5	24.7

6.—Progress of School expenditure per capita of total population.

	Expended per capita of total population.				
	1870-71.	1879-80.	1889-90.	1899-1900.	1903-4.
	$ c.	$ c.	$ c.	$ c.	$ c.
United States	1 75	1 56	2 24	2 84	3 36
North Atlantic Division	2 38	1 97	2 76	3 99	4 68
South Atlantic Division	63	68	99	1 24	1 44
South Central Division	73	55	97	1 08	1 30
North Central Division	2 14	2 03	2 81	3 27	3 85
Western Division	2 15	2 41	3 37	4 21	5 44
	1872—	1882—	1892—	1902—	1905—
Ontario	1 50	1 77	2 26	2 61	3 31

APPENDICES.

APPENDIX A.—*STATISTICAL TABLES.*

THE PUBLIC SCHOOLS.

I.—Table A.—School Population, Attendance, etc.

Counties, (including incorporated villages, but not cities or towns) etc.	School population between 5 and 21 years of age.	Pupils under 5 years of age.	Pupils between 5 and 21 years of age.	Pupils over 21 years of age.	Total number of pupils attending school.	Boys.	Girls.	Average daily attendance of pupils.	Percentage of average to total attendance.
1 Brant	3,773	9	3,025	1	3,035	1,576	1,459	1,725	57
2 Bruce	12,187	10	9,620	3	9,633	5,016	4,617	5,419	56
3 Carleton	8,691	16	6,504	1	6,521	3,469	3,052	3,262	50
4 Dufferin	4,889	11	4,217	....	4,228	2,278	1,950	1,884	44
5 Dundas	4,997	33	4,083	1	4,117	2,155	1,962	2,262	55
6 Durham	4,273	11	4,105	2	4,121	2,088	2,033	2,195	53
7 Elgin	6,782	14	5,462	....	5,476	2,847	2,629	3,168	58
8 Essex	10,031	12	6,086	2	6,100	3,132	2,968	3,314	54
9 Frontenac	6,564	40	5,432	2	5,474	2,885	2,589	2,251	41
10 Glengarry	4,924	11	3,837	....	3,848	1,992	1,856	1,836	47
11 Grey	14,534	60	11,723	3	11,786	6,102	5,684	5,993	51
12 Haldimand	4,859	16	3,490	1	3,507	1,827	1,680	2,150	61
13 Haliburton, N.E. Muskoka, S. Nipissing & E. Parry Sound	4,733	32	4,113	3	4,148	2,121	2,027	1,680	40
14 Halton	4,034	....	3,138	1	3,139	1,658	1,481	1,706	54
15 Hastings	10,865	18	8,557	....	8,575	4,377	4,198	4,429	52
16 Huron	13,826	5	9,265	5	9,275	4,833	4,442	5,668	61
17 Kent	9,218	23	7,575	....	7,598	3,948	3,650	3,935	52
18 Lambton	11,045	19	8,597	....	8,616	4,485	4,131	5,215	60
19 Lanark	5,533	12	3,998	1	4,011	2,031	1,980	2,354	59
20 Leeds and Grenville	9,859	31	8,441	....	8,472	4,280	4,192	4,457	53
21 Lennox and Addington	4,576	36	4,018	1	4,055	2,088	1,967	1,978	49
22 Lincoln	4,983	8	3,684	1	3,693	1,961	1,732	1,955	53
23 Middlesex	10,787	9	8,384	2	8,395	4,393	4,002	5,019	59
24 Norfolk	6,221	31	5,124	2	5,157	2,616	2,541	2,707	52
25 Northumberland	7,215	1	5,464	2	5,467	2,838	2,629	2,935	54
26 Ontario	7,646	7	6,384	1	6,392	3,325	3,067	3,475	54
27 Oxford	8,368	2	6,594	1	6,597	3,456	3,141	3,876	59
28 Peel	4,572	....	3,605	....	3,605	1,942	1,663	1,843	51
29 Perth	8,309	13	5,804	1	5,818	3,091	2,727	3,657	63
30 Peterborough	5,965	19	4,603	....	4,622	2,361	2,261	2,402	52
31 Prescott and Russell	13,299	19	5,059	2	5,080	2,610	2,470	2,494	49
32 Prince Edward	2,885	6	2,553	1	2,560	1,348	1,212	1,325	51
33 Renfrew	13,259	30	7,335	4	7,369	3,839	3,530	3,184	43
34 Simcoe and W. Muskoka	16,466	38	14,586	1	14,625	7,615	7,010	7,123	42
35 Stormont	4,779	13	3,624	....	3,637	1,912	1,725	1,856	51
36 Victoria and S. E. Muskoka	7,781	21	6,303	1	6,325	3,284	3,041	3,012	48
37 Waterloo	7,606	8	5,341	....	5,349	2,902	2,447	3,401	63
38 Welland	6,030	24	4,863	....	4,887	2,589	2,298	2,493	51
39 Wellington	10,882	17	7,384	3	7,404	3,956	3,448	4,370	59
40 Wentworth	6,054	1	4,558	....	4,559	2,347	2,212	2,518	55
41 York	14,144	19	11,215	....	11,234	6,053	5,181	5,991	53
42 Algoma and Manitoulin	6,883	40	5,731	9	5,780	2,959	2,821	2,696	47
43 Nipissing N., etc	3,959	13	2,895	1	2,909	1,486	1,423	1,440	49
44 Parry Sound W	4,714	22	3,656	2	3,680	1,876	1,804	1,603	43
45 Rainy River and Thunder Bay	2,165	....	1,867	....	1,867	975	892	889	48
46 Albany	120	3	10	....	13	6	7	12	92
Totals	345,285	786	261,912	61	262,759	136,928	125,831	139,207	53
Totals, incorporated villages	34,344	22	27,330	12	27,364	13,653	13,711	17,107	63
Totals, rural schools	310,941	764	234,582	49	235,395	123,275	112,120	122,100	52

THE PUBLIC SCHOOLS.—*Continued.*

I.—Table A.—School Population, Attendance, etc.—*Continued.*

Cities.	School population between 5 and 21 years of age.	Pupils under 5 years of age.	Pupils between 5 and 21 years of age.	Pupils over 21 years of age.	Total number of pupils attending school.	Boys.	Girls.	Average daily attendance of pupils.	Percentage of average to total attendance.
1 Belleville	1,955	....	1,341	....	1,341	702	639	853	64
2 Brantford	3,866	....	2,682	....	2,682	1,351	1,331	1,941	72
3 Chatham	2,692	....	1,572	....	1,572	781	791	1,039	66
4 Guelph	3,197	....	1,668	....	1,668	815	853	1,238	74
5 Hamilton	14,675	....	8,213	1	8,214	4,186	4,028	5,924	72
6 Kingston	5,640	....	2,385	....	2,385	1,201	1,184	1,853	78
7 London	9,659	....	5,823	....	5,823	2,918	2,905	4,242	73
8 Niagara Falls	1,886	....	1,248	....	1,248	640	608	777	62
9 Ottawa	17,904	9	5,406	1	5,416	2,738	2,678	3,792	70
10 Peterborough	2,237	....	1,913	....	1,913	973	940	1,371	72
11 St. Catharines	2,440	....	1,419	....	1,419	683	736	980	69
12 St. Thomas	4,269	....	2,083	....	2,083	996	1,087	1,487	71
13 Stratford	2,752	....	1,554	....	1,554	829	725	1,114	71
14 Toronto	52,358	2	30,331	1	30,334	15,300	15,034	21,991	72
15 Windsor	4,020	....	1,930	....	1,930	982	948	1,339	69
16 Woodstock	1,846	....	1,569	....	1,569	759	810	1,102	70
Totals	131,396	11	71,137	3	71,151	35,854	35,297	51,043	72
Towns.									
1 Alexandria	686	....	70	....	70	36	34	40	57
2 Alliston	596	....	337	4	341	218	123	217	63
3 Almonte	874	....	370	....	370	182	188	263	71
4 Amherstburg	600	....	299	....	299	151	148	196	65
5 Arnprior	1,170	....	588	....	588	276	312	400	68
6 Aurora	465	....	357	....	357	177	180	235	66
7 Aylmer	450	....	386	....	386	172	214	262	68
8 Barrie	1,615	....	1,147	....	1,147	561	586	671	58
9 Berlin	2,834	....	1,616	....	1,616	815	801	1,208	75
10 Blenheim	473	....	417	....	417	218	199	284	68
11 Bothwell	251	....	210	1	211	108	103	146	69
12 Bowmanville	556	....	471	....	471	239	232	349	74
13 Bracebridge	1,000	....	700	....	700	317	383	348	50
14 Brampton	644	....	506	....	506	264	242	357	70
15 Brockville	2,448	....	1,254	....	1,254	585	669	872	69
16 Bruce Mines	255	....	244	....	244	111	133	148	61
17 Cache Bay	250	....	192	....	192	89	103	102	53
18 Carleton Place	1,057	....	824	....	824	396	428	609	74
19 Clinton	513	....	429	....	429	236	193	313	73
20 Cobourg	1,003	....	557	....	557	282	275	360	65
21 Collingwood	1,857	....	1,319	....	1,319	682	637	939	71
22 Copper Cliff	324	....	323	....	323	173	150	198	61
23 Cornwall	2,031	....	650	....	650	346	304	494	76
24 Deseronto	825	....	600	1	601	308	293	455	76
25 Dresden	475	....	407	....	407	195	212	265	65
26 Dundas	984	....	574	....	574	271	303	408	71
27 Dunnville	625	....	450	....	450	227	223	300	67
28 Durham	488	....	425	....	425	191	234	318	75
29 East Toronto	820	....	791	....	791	391	400	495	62
30 Essex	442	....	337	....	337	174	163	205	61
31 Forest	426	....	314	....	314	141	173	219	70
32 Fort Frances	324	....	177	....	177	76	101	85	48
33 Fort William	1,525	....	845	....	845	425	420	504	60

THE PUBLIC SCHOOLS.—*Continued.*

I.—Table A.—School Population, Attendance, etc.—*Continued.*

Towns.	School population between 5 and 21 years of age.	Pupils under 5 years of age.	Pupils between 5 and 21 years of age.	Pupils over 21 years of age.	Total number of pupils attending school.	Boys.	Girls.	Average daily attendance of pupils.	Percentage of average to total attendance.
34 Galt	2,057	....	1,299	....	1,299	652	647	962	74
35 Gananoque	1,058	....	752	....	752	389	363	509	68
36 Goderich	981	....	571	....	571	272	299	395	69
37 Gore Bay	*391	....	307	1	308	131	177	185	60
38 Gravenhurst	677	....	615	....	615	318	297	378	61
39 Haileybury	200	....	170	....	170	70	100	66	39
40 Hanover	1,198	....	465	....	465	217	248	320	69
41 Harriston	365	....	326	....	326	150	176	220	67
42 Hawkesbury	1,488	....	167	....	167	91	76	96	57
43 Hespeler	503	....	481	....	481	245	236	336	70
44 Huntsville	630	....	579	....	579	290	289	363	63
45 Ingersoll	1,248	....	759	....	759	375	384	520	68
46 Kincardine	567	....	406	....	406	185	221	268	66
47 Kingsville	484	4	366	....	370	185	185	249	67
48 Kenora	1,650	....	884	....	884	445	439	568	64
49 Leamington	692	....	505	....	505	264	241	323	64
50 Lindsay	1,844	....	1,087	....	1,087	539	548	800	73
51 Listowel	817	....	481	....	481	255	226	318	66
52 Little Current	*340	....	294	....	294	139	155	154	52
53 Massey	250	....	150	....	150	82	68	70	47
54 Mattawa	450	....	86	....	86	48	38	40	46
55 Meaford	513	....	424	....	424	210	214	295	69
56 Midland	1,126	....	1,011	....	1,011	490	521	621	61
57 Milton	475	....	392	....	392	206	186	264	67
58 Mitchell	499	....	354	....	354	173	181	248	70
59 Mount Forest	584	....	426	....	426	223	203	289	68
60 Napanee	589	....	517	....	517	241	276	361	70
61 New Liskeard	308	....	353	1	354	188	166	142	40
62 Newmarket	633	....	434	....	434	218	216	305	70
63 Niagara	308	....	211	....	211	119	92	106	50
64 North Bay	1,227	....	647	....	647	327	320	437	67
65 North Toronto	701	....	585	....	585	279	306	318	54
66 Oakville	503	1	313	....	314	159	155	239	76
67 Orangeville	679	....	502	....	502	243	259	346	69
68 Orillia	1,552	....	921	2	923	472	451	622	67
69 Oshawa	1,313	....	861	....	861	417	444	557	65
70 Owen Sound	2,728	....	1,685	....	1,685	808	877	1,205	71
71 Palmerston	732	....	343	....	343	179	164	243	71
72 Paris	950	....	505	....	505	279	226	362	72
73 Parkhill	333	....	305	....	305	167	138	143	47
74 Parry Sound	*998	....	906	2	908	409	499	511	56
75 Pembroke	1,500	....	668	....	668	330	338	478	71
76†Penetanguishene	793	....	691	....	691	366	325	407	60
77 Perth	990	....	456	....	456	233	223	331	72
78 Petrolea	790	....	849	....	849	413	436	567	67
79 Picton	791	....	526	....	526	272	254	347	66
80 Port Arthur	2,200	....	826	....	826	409	417	520	63
81 Port Hope	1,200	....	793	....	793	385	408	583	73
82 Powassan	213	....	214	1	215	96	119	131	61
83 Prescott	824	....	428	....	428	200	228	280	65
84 Preston	580	....	387	....	387	180	207	289	75

* Estimated.

† Including Protestant Separate School.

THE PUBLIC SCHOOLS.—*Continued.*

I.—Table A.—School Population, Attendance, etc.—*Concluded.*

Towns.	School population between 5 and 21 years of age.	Pupils under 5 years of age.	Pupils between 5 and 21 years of age.	Pupils over 21 years of age.	Total number of pupils attending school.	Boys.	Girls.	Average daily attendance of pupils.	Percentage of average to total attendance.
85 Rainy River	295	....	237	....	237	125	112	111	47
86 Renfrew	1,047	....	462	....	462	244	218	293	63
87 Ridgetown	527	....	420	....	420	203	217	280	67
88 St. Mary's	779	....	531	....	531	275	256	381	72
89 Sandwich	497	....	179	....	179	87	92	102	57
90 Sarnia	2,230	....	1,566	....	1,566	761	805	1,071	68
91 Sault Ste. Marie	1,618	....	1,250	....	1,250	627	623	804	64
92 Seaforth	559	....	320	....	320	170	150	224	70
93 Simcoe	656	....	493	....	493	243	250	314	64
94 Smith's Falls	1,100	....	1,033	....	1,033	502	531	669	65
95 Southampton	501	....	414	....	414	180	234	285	69
96 Stayner	306	....	290	....	290	160	130	197	68
97 Steelton	715	12	487	....	499	254	245	291	58
98 Strathroy	561	....	485	1	486	241	245	339	70
99 Sturgeon Falls	1,500	....	299	....	299	163	136	169	56
100 Sudbury	760	....	229	....	229	118	111	143	62
101 Thessalon	434	....	383	....	383	189	194	201	52
102 Thornbury	207	....	183	....	183	92	91	112	61
103 Thorold	584	....	408	....	408	197	211	214	52
104 Tillsonburg	689	....	435	....	435	228	207	317	73
105 Toronto Junction	4,813	....	1,639	....	1,639	818	821	1,030	63
106 Trenton	973	....	548	....	548	267	281	365	67
107 Uxbridge	431	....	362	....	362	175	187	227	63
108 Vankleekhill	467	....	154	....	154	73	81	105	68
109 Walkerton	682	....	368	....	368	177	191	300	81
110 Walkerville	637	....	510	1	511	274	237	257	50
111 Wallaceburg	720	....	634	....	634	323	311	407	64
112 Waterloo	1,035	....	554	....	554	287	267	432	78
113 Welland	430	....	277	....	277	146	131	171	62
114 Whitby	683	....	380	....	380	202	178	246	65
115 Wiarton	*851	....	632	....	632	335	297	421	67
116 Wingham	646	....	597	....	597	270	327	397	66
Totals	101,351	17	63,228	15	63,260	31,472	31,788	41,827	66
Totals.									
1 Rural Schools	310,941	764	234,582	49	235,395	123,275	112,120	122,100	52
2 Cities	131,396	11	71,137	3	71,151	35,854	35,297	51,043	72
3 Towns	101,351	17	63,228	15	63,260	31,472	31,788	41,827	66
4 Villages	34,344	22	27,330	12	27,364	13,653	13,711	17,107	63
5 Grand totals, 1905	578,032	814	396,277	79	397,170	204,254	192,916	232,077	58.43
6 Grand totals, 1904	576,537	790	395,922	102	396,814	203,417	193,397	227,165	57.25
7 Increases	1,495	24	355	....	356	837	.....	4,912	1.18
8 Decreases	.....	....	.....	23	.....	.....	481	.....	.....
9 Percentages	.....	.20	99.78	.02	.....	51.43	48.57	58.43	.....

* Estimated.

THE PUBLIC

II.—Table B.—Number of pupils in the

Counties (including incorporated villages, but not cities or towns, etc.)	Reading. 1st Reader, Part I.	1st Reader, Part II.	2nd Reader.	3rd Reader.	4th Reader.	5th Reader.	Art.	Geography.	Music.	Literature.	Composition.
1 Brant	632	362	528	684	675	154	2,902	2,331	2,277	2,386	2,375
2 Bruce	2,275	1,262	1,939	1,984	1,738	435	7,508	6,758	4,998	7,870	7,117
3 Carleton	1,488	877	1,109	1,198	1,283	566	6,500	4,432	2,939	4,454	4,467
4 Dufferin	908	556	712	935	927	190	3,925	3,178	2,549	3,458	3,402
5 Dundas	941	513	994	699	769	201	3,885	3,920	2,843	3,546	3,404
6 Durham	717	613	973	850	805	163	3,882	2,058	1,918	3,224	2,935
7 Elgin	1,249	627	1,003	1,060	1,069	468	5,137	4,401	3,439	4,215	4,344
8 Essex	1,700	1,186	1,241	1,068	786	119	5,725	3,730	3,690	4,892	5,050
9 Frontenac	1,312	866	917	1,109	1,155	115	5,144	3,330	2,078	2,977	3,256
10 Glengarry	1,218	575	768	529	681	77	3,713	2,605	1,360	2,856	2,629
11 Grey	2,948	1,489	2,604	2,436	1,957	352	10,649	9,026	6,552	8,818	8,587
12 Haldimand	646	521	702	687	794	157	3,447	2,687	2,400	2,759	2,841
13 Haliburton, etc.	1,177	823	792	697	534	125	3,571	2,305	323	2,291	1,558
14 Halton	748	436	520	613	678	144	3,119	2,378	1,776	2,452	2,411
15 Hastings	2,543	1,410	1,678	1,519	1,096	329	6,851	6,000	4,360	7,307	6,987
16 Huron	1,523	929	1,703	2,036	2,185	899	3,941	4,399	2,286	4,587	4,383
17 Kent	1,898	941	1,280	1,338	1,467	674	7,474	5,493	4,338	5,177	5,305
18 Lambton	2,167	1,291	1,456	1,569	1,087	446	7,602	5,772	5,347	6,488	7,181
19 Lanark	924	545	803	790	775	174	4,011	2,762	1,405	2,948	2,855
20 Leeds and Grenville	1,874	1,127	1,555	1,788	1,828	300	7,931	6,345	4,317	5,955	5,634
21 Lennox & Addington	1,009	513	695	793	875	170	3,497	2,683	1,574	2,614	2,618
22 Lincoln	840	442	625	828	864	94	2,572	2,696	2,119	2,781	2,566
23 Middlesex	1,634	1,134	1,490	1,829	1,816	492	8,279	6,812	6,226	7,245	7,246
24 Norfolk	1,101	643	1,087	975	1,131	220	5,017	4,141	3,361	4,210	4,347
25 Northumberland	1,258	642	1,164	1,150	1,078	178	3,704	3,830	2,330	4,302	4,359
26 Ontario	1,401	844	1,167	1,323	1,437	220	5,711	4,442	3,656	5,591	4,867
27 Oxford	1,335	881	1,119	1,301	1,467	494	5,324	4,619	3,144	5,071	4,803
28 Peel	763	533	568	849	772	120	3,007	2,629	1,099	3,066	2,922
29 Perth	1,065	631	1,075	1,563	1,255	229	5,433	4,461	4,862	5,703	4,081
30 Peterborough	1,119	700	869	926	876	182	3,726	3,382	1,663	3,440	3,348
31 Prescott and Russell	1,750	814	839	790	737	150	4,564	2,623	1,688	3,010	3,119
32 Prince Edward	547	293	418	440	664	198	2,435	1,921	1,148	1,800	1,870
33 Renfrew	2,027	1,236	1,331	1,413	1,074	288	6,180	4,000	1,162	220	314
34 Simcoe & W. Muskoka	3,319	2,157	2,735	2,863	2,753	798	11,084	10,156	8,378	10,497	9,499
35 Stormont	873	470	764	752	620	158	3,294	2,821	1,556	3,088	2,979
36 Victoria&S.E.Muskoka	1,408	824	1,301	1,336	1,186	270	5,485	4,739	2,674	5,151	4,831
37 Waterloo	1,056	680	1,297	1,308	825	183	4,319	3,695	3,478	4,243	3,849
38 Welland	1,097	716	866	956	1,008	244	4,842	3,222	2,984	3,542	3,254
39 Wellington	1,467	865	1,277	1,708	1,678	409	6,920	5,189	4,335	5,491	5,344
40 Wentworth	916	527	780	1,153	1,000	183	4,036	3,348	2,646	3,704	3,340
41 York	2,809	1,542	1,995	2,255	2,389	244	9,995	8,432	6,924	8,791	8,067
42 Algoma & Manitoulin	1,749	963	1,008	1,037	911	112	4,520	3,304	1,873	3,352	3,392
43 Nipissing, N., etc	1,061	592	482	461	300	13	2,791	1,147	282	1,370	1,210
44 Parry Sound, W.	1,092	515	633	752	565	123	2,116	2,163	1,035	2,465	2,350
45 Rainy River & Thunder Bay	514	292	331	367	311	52	1,784	1,245	805	1,325	1,274
46 Albany	5	2	3	3	.....	.....	4	6	12	.....	8
Totals	62,103	36,406	49,193	52,720	50,481	11,862	227,556	181,216	132,209	190,732	182,558
Totals Incor. Villages.	6,390	3,812	5,005	4,982	4,790	2,415	24,475	22,065	19,789	23,850	22,824
Totals Rural Schools	55,713	32,588	44,188	47,738	45,721	9,447	203,083	159,151	112,420	167,396	159,734
Cities.											
1 Belleville	303	219	276	306	240	.....	1,066	967	876	1,002	1,158
2 Brantford	708	508	594	718	434	60	2,682	1,921	2,447	2,682	2,682
3 Chatham	290	212	332	351	387	.....	1,572	1,380	1,572	1,572	1,572
4 Guelph	341	201	231	485	308	102	1,668	1,326	1,546	1,024	1,668
5 Hamilton	1,267	1,074	1,114	2,325	1,885	549	8,186	6,339	8,214	7,030	7,047
6 Kingston	512	277	299	662	635	.....	2,385	1,991	2,385	2,369	2,189
7 London	976	753	1,386	1,376	1,332	.....	5,823	5,823	5,823	5,823	5,798
8 Niagara Falls	107	135	222	258	246	.....	706	773	628	773	773
9 Ottawa	1,086	761	677	1,311	1,575	206	2,892	2,892	689	2,892	2,892
10 Peterborough	540	277	361	317	418	.....	1,913	1,096	442	1,096	1,913
11 St. Catharines	367	212	216	347	277	.....	1,052	1,052	.....	840	1,419
12 St. Thomas	611	238	367	434	433	.....	2,083	2,083	1,973	2,083	2,083
13 Stratford	310	243	226	429	316	.....	1,554	1,080	1,163	1,454	1,058
14 Toronto	5,817	3,389	6,714	6,317	6,982	974	29,360	29,573	30,207	27,339	28,519
15 Windsor	571	285	279	423	372	.....	1,930	1,930	1,930	1,930	1,930
16 Woodstock	399	221	238	562	349	.....	849	1,569	.....	1,569	849
Totals	14,505	9,009	13,332	16,398	16,019	1,891	65,721	61,735	60,195	61,478	63,550

SCHOOLS.—*Continued.*

various branches of instruction.

	Grammar.	English History.	Canadian History.	Physiology and Hygiene.	Nature Study.	Physical Culture.	Book-keeping.	Algebra.	Geometry.	Latin.	French.	German.	Elementary Science.	Commercial Subjects	Agriculture.	Manual Training.	Household Science.
1	1,593	1,148	1,487	1,473	2,437	1,858	138	153	113	47	28	....	95	38	177	91	9
2	5,101	2,520	4,152	4,636	5,542	3,318	452	381	330	221	77	....	302	261	658	330	.....
3	4,375	2,156	2,857	2,151	1,480	3,140	463	513	504	247	160	....	471	79	1,077	148	.....
4	2,558	1,675	1,758	1,982	3,472	2,354	141	173	167	115	39	7	122	106	370	92	18
5	1,936	1,430	2,006	2,321	3,604	3,005	178	194	192	85	4	....	137	133	431	49	73
6	1,999	1,067	1,360	1,587	2,799	1,918	129	157	154	70	49	....	70	55	121	.....	.....
7	3,213	2,273	2,874	3,244	4,672	3,167	429	411	414	134	6	7	45	233	549	390	.....
8	2,556	1,011	1,833	5,000	5,038	2,910	155	114	100	37	782	....	225	79	877	10	20
9	2,754	1,705	2,125	1,839	2,824	2,205	132	80	71	24	18	2	27	41	292	36	2
10	1,492	990	1,265	1,498	3,617	1,726	89	80	77	36	25	....	40	82	145	.....	.....
11	6,096	3,333	5,081	7,514	10,275	4,247	627	366	270	126	2	10	187	142	511	454	58
12	2,052	1,282	1,523	1,626	3,507	3,507	139	147	148	83	10	10	93	81	877	10	10
13	1,449	1,163	1,000	722	804	130	89	95	92	.....	.....	.....	.....	.....	30	.....	.....
14	2,243	2,326	1,484	1,657	2,944	2,899	110	131	128	41	33	....	177	50	416	.....	.....
15	2,934	2,363	3,626	5,412	6,654	4,919	887	321	308	65	11	....	196	271	583	102	20
15	3,354	1,785	2,722	1,895	4,059	2,015	573	519	585	225	71	3	289	202	603	138	108
17	4,613	2,752	3,268	3,886	5,176	4,609	1,016	662	662	69	87	6	532	103	2,068	292	20
18	3,887	2,573	3,924	4,604	7,340	5,330	359	415	398	189	69	1	270	212	571	284	.....
19	1,973	1,127	1,501	447	3,211	2,211	170	167	161	94	71	....	144	72	238	220	.....
20	4,117	3,003	3,601	3,837	5,146	2,823	270	278	271	75	25	....	144	45	456	71	.....
21	2,165	1,400	1,714	1,644	3,276	1,921	152	146	127	43	5	....	85	87	99	46	.....
22	2,109	1,481	1,583	1,725	2,517	1,693	192	76	39	13	3	....	22	54	337	39	.....
23	4,422	3,368	4,293	5,364	7,793	4,683	424	447	411	110	41	....	272	108	1,604	476	.....
24	2,640	1,778	2,346	3,355	4,838	3,641	257	200	188	35	3	....	249	152	903	19	15
25	2,724	1,189	1,691	1,906	3,792	2,114	150	164	143	71	26	....	55	55	336	250	10
26	3,380	2,310	2,826	2,857	4,394	3,015	258	202	177	15	2	....	145	83	480	100	32
27	3,508	2,239	2,993	2,633	4,647	2,638	432	452	409	216	62	28	324	277	326	.....	.....
28	1,940	1,517	1,704	1,407	2,831	1,374	80	118	118	50	34	....	33	7	116	.....	.....
29	3,925	2,000	2,892	2,376	5,684	5,083	228	215	206	11	5	3	246	15	1,306	.....	.....
30	2,848	1,500	1,863	1,928	2,649	1,818	182	99	96	6	5	....	119	35	151	23	.....
31	2,196	1,076	1,575	1,484	3,311	2,515	163	138	137	34	2,108	....	37	57	167	.....	.....
32	1,502	1,015	1,157	1,340	2,325	1,033	197	162	152	26	19	....	104	96	766	.....	.....
33	3,806	1,737	2,240	1,616	60	1,932	265	269	246	18	.....	.....	71	1	402	.....	.....
34	7,926	4,973	6,265	5,579	10,355	8,596	856	828	734	271	234	10	491	948	1,859	1	.....
35	1,911	1,078	1,586	1,857	2,847	1,331	163	154	139	52	122	....	119	128	202	.....	.....
36	2,844	1,976	2,776	2,401	9,898	2,275	270	261	221	49	27	16	137	172	157	141	146
37	2,232	1,127	1,929	1,247	4,426	2,380	156	141	124	52	6	164	63	83	189	.....	.....
38	2,887	1,575	1,964	2,066	2,149	1,301	230	223	200	21	11	2	221	104	229	.....	.....
39	4,470	2,554	3,576	3,136	5,101	3,899	353	370	346	115	82	8	295	147	743	304	33
40	2,776	1,265	2,121	1,615	3,902	2,092	167	178	168	24	5	2	133	117	309	78	9
41	6,041	3,876	5,147	4,362	7,397	3,830	584	219	189	115	75	....	104	146	390	450	81
42	2,539	1,515	1,898	1,996	3,266	1,615	162	104	105	19	9	....	45	36	277	.....	.....
43	1,062	436	747	575	359	539	16	12	12	1	1,455	....	13	7	80	.....	.....
44	1,789	866	1,879	1,011	1,904	1,394	124	120	115	35	.....	.....	45	71	207	.....	.....
45	709	411	692	817	1,108	804	60	51	46	7	3	....	63	47	65	25	.....
46	8	7	.....	12	.....	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	134,654	81,951	108,907	113,640	185,430	121,819	12,667	10,706	10,026	3,422	5,909	279	7,057	5,318	22,660	4,669	664
	15,746	9,624	13,560	14,331	22,201	15,070	2,272	2,345	2,206	1,409	844	73	2,104	1,349	611	780	172
	118,908	72,327	95,347	99,309	163,229	106,749	10,395	8,361	7,820	2,013	5,065	206	4,953	3,969	22,049	3,889	492
1	543	240	591	543	1,141	304	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	762	561	1,076	2,422	2,422	2,422	60	.....	.....	.....	.....	.....	.....	60	.....	255	255
3	895	865	968	1,179	1,572	1,572	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,499	134
4	895	308	793	793	1,566	1,566	102	.....	.....	.....	.....	.....	.....	102	.....	406	477
5	6,555	3,327	4,167	5,199	7,820	8,214	535	535	377	.....	.....	.....	242	535	.....	25	1,041
6	841	1,006	1,135	2,257	2,385	2,357	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,385	95
7	1,332	2,487	3,696	5,823	5,823	5,823	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	773	419	595	595	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	2,892	206	1,375	1,581	.....	5,416	206	.....	1,440	.....	.....	.....	.....	206	.....	1,440	.....
10	735	248	735	735	1,495	1,038	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	624	277	445	445	1,419	1,419	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	867	438	867	1,472	2,083	2,083	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	336	238	536	1,436	1,554	1,554	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	25,978	5,478	8,485	23,970	29,357	30,067	2,313	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15	1,930	695	695	1,930	1,930	1,930	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	611	249	611	819	1,569	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	46,569	17,042	26,770	51,229	62,136	65,765	3,216	535	1,817	.....	.....	.....	242	903	.....	6,010	2,002

THE PUBLIC

II.—Table B.—Number of pubils in the

Towns.	Reading.									
	1st Reader, Part I.	1st Reader, Part II.	2nd Reader.	rd Reader.	4th Reader.	5th Reader.	Art.	Geography.	Music.	Literature.	Composition.
1 Alexandria	19	6	9	18	18	.....	70	45	.....	45	36
2 Alliston	54	45	40	55	55	92	341	341	341	341	341
3 Almonte	72	61	88	73	76	.....	370	370	.....	370	370
4 Amherstburg	58	55	62	49	46	29	299	187	299	204	299
5 Arnprior	163	131	135	96	63	.....	588	294	588	588	588
6 Aurora	93	76	60	59	69	.....	357	357	288	357	357
7 Aylmer	46	62	81	92	105	.....	386	386	173	386	386
8 Barrie	272	135	285	210	245	.....	1,147	1,147	1,091	875	875
9 Berlin	258	221	448	404	285	.....	1,616	1,137	1,616	1,616	1,616
10 Blenheim	97	56	65	85	48	66	411	282	311	282	282
11 Bothwell	33	16	25	27	33	77	185	178	.....	178	211
12 Bowmanville	107	52	97	106	109	.....	471	312	471	471	350
13 Bracebridge	210	91	148	67	184	.....	700	700	564	.....	490
14 Brampton	101	93	93	129	90	.....	506	506	506	506	506
15 Brockville	255	179	232	270	318	.....	1,254	1,254	1,254	1,254	1,254
16 Bruce Mines	52	28	49	31	35	49	232	164	80	200	192
17 Cache Bay	97	15	36	26	11	7	192	80	47	192	192
18 Carleton Place	218	154	150	167	135	.....	824	606	.....	606	606
19 Clinton	107	54	87	109	72	.....	429	343	429	343	343
20 Cobourg	129	54	106	121	147	.....	557	429	557	374	377
21 Collingwood	360	214	180	289	276	.....	1,319	1,319	1,319	1,319	1,319
22 Copper Cliff	146	52	49	43	18	15	323	323	323	323	323
23 Cornwall	227	96	97	129	101	.....	650	413	650	327	529
24 Deseronto	202	92	116	119	72	.....	384	356	489	492	492
25 Dresden	72	126	63	27	40	79	335	335	328	209	335
26 Dundas	148	119	59	107	141	.....	574	307	574	574	574
27 Dunnville	135	54	88	77	96	.....	450	261	354	193	261
28 Durham	79	75	51	54	54	112	352	318	313	358	271
29 East Toronto	256	104	138	132	161	.....	791	535	791	525	791
30 Essex	99	62	86	60	30	.....	337	176	.....	337	176
31 Forest	72	54	53	52	83	.....	314	188	314	188	291
32 Fort Frances	66	13	26	35	15	22	177	177	.....	177	177
33 Fort William	265	147	156	130	147	.....	845	845	845	845	845
34 Galt	360	.....	286	320	333	.....	1,299	998	629	1,299	1,299
35 Gananoque	207	118	161	128	138	.....	752	545	375	752	752
36 Goderich	82	77	149	170	93	.....	571	571	571	571	571
37 Gore Bay	56	36	38	73	58	47	247	217	.....	217	217
38 Gravenhurst	180	73	133	133	96	.....	615	357	366	357	417
39 Haileybury	65	31	26	35	13	.....	74	93	74	114	93
40 Hanover	129	59	119	68	46	44	465	336	421	465	465
41 Harriston	76	39	63	70	78	.....	326	250	250	326	260
42 Hawkesbury	47	15	26	42	37	.....	167	105	57	167	167
43 Hespeler	73	131	62	140	50	25	481	481	.....	481	481
44 Huntsville	190	86	108	97	55	43	327	307	.....	435	361
45 Ingersoll	154	62	179	188	176	.....	759	759	759	759	759
46 Kincardine	106	47	100	70	83	.....	406	300	406	406	406
47 Kingsville	112	51	58	73	60	16	370	305	224	305	370
48 Kenora	323	129	158	132	142	.....	561	884	884	884	884
49 Leamington	134	69	84	142	76	.....	505	371	321	505	505
50 Lindsay	270	69	239	242	267	.....	1,087	748	1,087	1,087	1,087
51 Listowel	131	52	49	116	133	.....	481	350	259	350	481
52 Little Current	99	51	52	41	39	12	294	294	294	179	294
53 Massey	59	23	22	20	23	3	150	150	150	150	150
54 Mattawa	21	7	23	15	20	.....	86	58	51	58	58
55 Meaford	127	32	116	67	82	.....	424	424	424	424	424
56 Midland	320	208	200	164	119	.....	1,011	691	1,011	1,011	1,011
57 Milton	122	29	71	34	67	69	380	392	392	392	392
58 Mitchell	67	36	51	95	105	.....	354	251	354	251	287
59 Mount Forest	77	54	98	93	104	.....	426	376	426	295	376
60 Napanee	95	84	84	119	135	.....	517	517	517	517	517
61 New Liskeard	105	85	42	81	32	9	354	354	354	354	354
62 Newmarket	122	40	101	91	80	.....	434	297	434	434	434
63 Niagara	59	13	20	56	63	.....	211	152	59	139	152
64 North Bay	217	153	82	101	94	.....	647	456	647	647	647
65 North Toronto	195	101	90	89	98	12	585	272	414	426	426
66 Oakville	68	61	66	46	73	.....	314	314	314	170	314
67 Orangeville	109	69	107	102	115	.....	502	393	433	502	502
68 Orillia	248	141	159	163	169	43	689	672	782	676	672

SCHOOLS.—*Continued.*

various branches of instruction.—*Continued.*

	Grammar.	English History.	Canadian History	Physiology and Hygiene	Nature Study.	Physical Culture.	Bookkeeping.	Algebra.	Geometry.	Latin.	French.	German.	Elementary Science.	Commercial Subjects.	Agriculture.	Manual Training.	Household Science.
1	36	36	36	36	70	70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	341	202	202	149	341	341	46	92	92	36	10	.....	92	46	55	.....	.....
3	207	76	110	76	370	370	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	124	87	124	157	98	.....	13	29	29	21	21	3	21	13	.....	.....	.....
5	159	63	159	588	588	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	357	128	128	357	357	288	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	327	105	197	105	386	281	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	455	546	584	1,011	1,062	1,147	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	285	82	285	1,616	1,616	1,616	.....	.....	.....	.....	.....	.....	.....	.....	.....	82	68
10	224	114	191	158	311	258	60	66	66	41	32	.....	66	60	.....	.....	.....
11	162	110	110	60	185	.....	77	77	77	53	.....	4	77	.....	.....	.....	.....
12	215	109	215	471	471	471	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	490	251	251	700	.....	700	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	219	90	219	247	448	448	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15	1,254	318	270	1,254	1,254	1,254	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	115	84	115	35	195	129	25	49	49	49	9	.....	49	.....	.....	.....	.....
17	113	18	66	37	113	192	7	7	7	.....	.....	.....	7	7	7	.....	.....
18	302	90	212	135	824	824	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	181	72	287	287	429	429	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	377	201	268	374	557	159	.....	.....	.....	.....	.....	.....	.....	.....	.....	72	*316
21	621	621	1,319	1,319	1,319	1,319	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	125	76	76	76	323	323	15	15	15	.....	.....	.....	15	15	33	.....	.....
23	230	101	230	327	650	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	151	151	191	205	601	293	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	146	146	146	67	157	.....	50	79	79	56	26	.....	79	50	.....	.....	.....
26	307	141	248	307	574	574	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	193	56	96	193	450	257	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	263	166	220	184	382	.....	39	112	112	58	50	.....	112	.....	.....	.....	.....
29	185	161	392	291	791	791	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	111	30	90	278	337	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	135	83	135	135	314	314	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
32	72	37	50	50	50	.....	22	22	18	11	11	.....	17	17	.....	.....	.....
33	362	229	438	754	845	697	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
34	480	293	603	1,040	1,299	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
35	138	266	462	545	752	752	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
36	263	93	263	571	571	571	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
37	179	105	217	15	.....	92	31	47	47	10	10	.....	47	31	.....	.....	.....
38	178	178	229	209	615	119	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
39	93	74	93	13	74	74	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
40	336	90	158	277	421	438	26	43	44	41	.....	42	44	26	.....	.....	.....
41	221	78	148	250	250	250	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
42	79	37	79	79	167	167	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
43	117	75	117	117	481	.....	25	25	25	.....	.....	.....	.....	.....	25	.....	.....
44	233	98	195	264	.....	.....	43	43	43	.....	.....	.....	30	.....	.....	.....	.....
45	365	176	365	759	759	759	.....	.....	.....	.....	.....	.....	.....	.....	.....	76	100
46	153	163	300	406	406	406	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
47	207	76	207	354	370	370	16	16	16	13	.....	.....	16	16	.....	.....	.....
48	274	432	432	561	884	884	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
49	218	76	218	505	505	505	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
50	737	190	837	514	1,087	618	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
51	298	189	217	189	481	481	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
52	92	51	116	39	294	294	12	12	12	12	.....	.....	.....	.....	.....	.....	.....
53	150	46	46	46	.....	150	3	3	3	.....	.....	.....	46	.....	46	.....	.....
54	58	20	35	35	35	.....	1	3	1	.....	.....	.....	.....	.....	.....	.....	.....
55	149	82	149	424	424	424	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
56	691	195	691	691	1,011	.....	.....	.....	.....	.....	.....	.....	70	.....	.....	.....	.....
57	170	136	170	392	380	392	50	69	69	25	25	.....	30	.....	39	.....	.....
58	200	150	200	105	354	354	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
59	197	104	197	376	426	426	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
60	254	254	254	254	517	517	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
61	164	78	249	354	354	354	9	9	9	.....	.....	.....	7	9	9	.....	.....
62	210	80	137	434	434	434	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
63	139	63	80	139	.....	211	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
64	647	127	288	647	647	647	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
65	426	176	223	130	.....	585	12	12	12	.....	.....	.....	.....	12	12	.....	.....
66	119	73	73	170	314	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
67	172	217	393	393	502	502	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
68	410	416	416	422	689	353	43	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

*Sewing.

THE PUBLIC

II.—Table B.—Number of pupils in the

Towns.	Reading.										
	1st Reader, Part I.	1st Reader, Part II.	2nd Reader.	3rd Reader.	4th Reader.	5th Reader.	Art.	Geography.	Music.	Literature.	Composition.
69 Oshawa	216	135	164	211	135		861	512	619	861	588
70 Owen Sound	296	241	405	362	381		1,685	1,389	1,685	1,148	1,685
71 Palmerston	112	41	55	42	41	52	331	343	71	343	272
72 Paris	118	98	73	143	73		505	505		289	505
73 Parkhill	91	42	55	62	55		305	214	305	305	305
74 Parry Sound	367	82	117	157	120	65	884	443	595	458	749
75 Pembroke	192	103	109	88	176			476		668	668
76 *Penetanguishene	255	82	99	102	104	49	514	453	391	386	691
77 Perth	108	39	98	110	101		456	309	456	309	456
78 Petrolea	264	141	120	194	130		849	849	849	849	849
79 Picton	102	69	94	130	131		526	526	526	526	526
80 Port Arthur	254	138	121	169	144		826	434	826	826	826
81 Port Hope	193	137	153	155	155		793	793		793	793
82 Powassan	70	37	26	32	23	27	215	215		108	108
83 Prescott	98	92	52	46	140		428	428	428	428	428
84 Preston	110	41	93	84	59		387	236	387	387	236
85 Rainy River	97	30	53	21	32	4	237	140	237	237	237
86 Renfrew	146	55	63	70	128		462	316	290	316	384
87 Ridgetown	116	29	98	82	95		420	420	325	420	420
88 St. Mary's	101	51	83	160	136		531	396	197	82	461
89 Sandwich	59	34	26	32	28		179	170		100	170
90 Sarnia	506	213	258	298	291		1,229	994	1,348	1,015	1,300
91 Sault Ste. Marie	295	216	257	292	190		1,250	1,250	1,250	1,045	956
92 Seaforth	70	43	50	73	84		320	320	113	320	207
93 Simcoe	120	74	119	63	117		493	493	493	493	180
94 Smith's Falls	301	142	220	190	180		1,033	1,033	1,033	1,033	1,033
95 Southampton	92	64	91	83	49	35	414	258	379	414	414
96 Stayner	70	48	40	52	40	40	290	290	290	290	290
97 Steelton	146	83	119	68	83		315	346	252	310	352
98 Strathroy	112	44	112	108	110		486	416	486	459	459
99 Sturgeon Falls	104	60	47	38	34	16	299	195	211	135	195
100 Sudbury	72	17	47	32	39	22	221	146		157	197
101 Thessalon	107	79	50	70	52	25	383	197	383	147	147
102 Thornbury	40	27	29	36	35	16	183	133	96	127	127
103 Thorold	112	56	90	90	60		408	334	147	240	240
104 Tillsonburg	81	53	88	74	139		435	301	435	435	435
105 Toronto Junction	420	265	287	298	369		1,639	954	1,639	1,639	1,219
106 Trenton	189	103	143	79	84		548	306	465	306	394
107 Uxbridge	98	28	94	81	61		362	236	362	362	362
108 Vankleek Hill	32	5	34	30	53		154	154	101	117	154
109 Walkerton	76	75	63	72	82		368	302	368	368	368
110 Walkerville	190	70	62	111	48	30	403	321	511	251	403
111 Wallaceburg	200	75	99	113	54	93	634	359		359	359
112 Waterloo	130	31	177	96	120		554	415		267	522
113 Welland	64	46	49	49	69		277	213	277	277	277
114 Whitby	68	57	68	80	107		380	380	380	380	380
115 Wiarton	133	118	159	145	77		632	381	632	499	331
116 Wingham	97	64	122	105	69	140		436	291	500	436
Totals	16,613	8,996	12,011	12,342	11,813	1,485	59,761	49,441	48,763	52,944	55,734
Totals											
1 Rural Schools	55,713	32,588	44,188	47,738	45,721	9,447	203,083	159,151	112,420	167,396	159,784
2 Cities	14,505	9,006	13,332	16,398	16,019	1,891	65,721	61,795	60,195	61,478	63,550
3 Towns	16,613	8,996	12,011	12,342	11,813	1,485	59,761	49,441	48,763	52,944	55,734
4 Villages	6,390	3,812	5,005	4,982	4,760	2,415	24,473	22,065	19,789	23,336	22,824
5 Grand totals, 1905	93,221	54,402	74,536	81,460	78,313	15,238	353,038	292,452	241,167	305,154	301,842
6 Grand totals, 1904	91,183	56,391	75,745	81,585	76,528	15,382	382,746	290,618	234,072		274,447
7 Increases	2,038				1,785			1,834	7,095		27,395
8 Decreases		1,989	1,209	125		144	29,708				
9 Percentages	23.48	13.70	18.77	20.51	19.71	3.83	88.90	73.63	60.72	76.83	76.00

*Including Protestant Separate School.

SCHOOLS.—*Continued.*

various branches of instruction.—*Concluded.*

	Grammar.	English History.	Canadian History.	Physiology and Hygiene.	Nature Study.	Physical Culture.	Bookkeeping.	Algebra.	Geometry.	Latin.	French.	German.	Elementary Science.	Commercial Subjects.	Agriculture.	Manual Training.	Household Science.
69	461	135	135	135	861	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
70	553	553	743	1,148	1,685	1,685	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
71	272	193	138	138	343	.....	40	52	52	52	52	...	302	40	.....	.....	.....
72	216	73	158	505	505	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
73	172	117	117	117	305	305	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
74	341	185	275	320	629	491	42	65	65	40	10	6	64	42	.....	.....	.....
75	373	176	284	176	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
76	254	182	272	183	324	267	19	49	35	30	33	7	35	35	30	.....	.....
77	211	101	144	101	456	456	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
78	324	130	324	585	849	849	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
79	261	261	355	526	526	526	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
80	211	826	826	826	826	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
81	310	463	463	793	793	793	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
82	108	50	82	82	215	.....	27	27	27	.....	.....	.....	27	.....	.....	.....	.....
83	140	186	238	428	428	428	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
84	143	59	143	59	387	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
85	140	36	57	32	237	36	4	4	4	.....	.....	1	4	4	.....	.....	.....
86	261	198	198	198	462	462	73	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
87	275	177	177	304	420	145	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
88	411	249	316	136	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
89	170	60	60	93	179	179	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
90	589	284	621	1,566	1,566	1,566	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
91	780	362	758	1,035	1,110	1,041	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
92	157	109	157	109	207	320	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
93	180	117	180	493	493	493	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
94	480	180	180	180	1,033	1,033	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
95	167	84	167	132	414	414	35	35	35	14	.....	14	35	35	.....	.....	.....
96	172	132	132	92	290	290	40	40	40	40	8	..	40	40	40	.....	.....
97	286	139	350	381	304	223	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
98	218	254	363	486	486	486	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
99	88	50	88	72	85	...	16	16	16	12	.....	.....	.....	.....	.....	.....	.....
100	197	61	93	39	.....	.....	14	22	22	22	2	...	22	.....	.....	.....	.....
101	147	77	147	77	383	.....	25	25	25	.....	.....	.....	25	25	77	.....	.....
102	127	87	112	112	183	183	16	16	16	16	.....	..	16	16	.....	.....	.....
103	240	83	150	240	212	147	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
104	213	435	435	213	435	435	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
105	667	667	954	1,639	1,639	1,639	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
106	163	84	122	211	548	337	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
107	236	61	142	142	362	362	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
108	83	83	154	154	154	154	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
109	154	154	302	302	368	368	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
110	251	78	189	291	511	511	40	28	28	14	.....	.....	.....	28	.....	.....	.....
111	359	260	260	94	340	.....	51	93	90	35	20	...	93	.....	.....	.....	.....
112	267	175	267	120	415	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
113	167	69	118	118	277	277	.....	.....	.....	.....	.....	...	.....	.....	.....	.....	.....
114	187	107	187	380	380	380	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
115	222	77	222	632	632	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
116	209	209	314	69	360	.....	74	140	140	94	37	...	140	.....	.....	.....	.....
	30,274	18,625	29,186	39,982	55,588	43,955	1,144	1,442	1,420	795	356	77	1,598	567	373	230	484
1	118,908	72,327	95,347	99,309	163,229	106,749	10,395	8,361	7,820	2,013	5,065	206	4,953	3,969	22,049	3,889	492
2	46,569	17,042	26,770	51,229	62,136	65,765	3,216	535	1,817	.....	.....	...	242	903	.....	6,010	2,002
3	30,271	18,625	29,186	39,982	55,588	43,955	1,144	1,442	1,420	795	356	77	1,598	567	373	230	484
4	15,746	9,624	13,560	14,331	22,201	15,070	2,272	2,345	2,206	1,409	844	73	2,104	1,349	611	780	172
5	211,497	117,618	164,863	204,851	303,154	231,539	17,027	12,683	13,263	4,217	6,265	356	8,897	6,788	23,033	10,909	3,150
6	274,447	106,116	154,877	191,705	.....	229,820	17,356	13,220	13,009	.....	.....	...	11,263	.....	35,943	.....	.....
7	.....	11,502	9,986	13,146	.....	1,719	.....	.....	254	.....	.....	...	.....	.....	.....	.....	.....
8	62,950	.....	.....	.....	.....	.....	329	537	.....	.....	.....	...	2,366	.....	12,910	.....	.....
9	53.25	29.61	41.51	51.58	76.33	58.30	4.29	3.19	3.34	1.06	1.58	.09	2.24	1.71	5.7	2.75	7.9

THE PUBLIC

III.—Table C.—Teachers,

Rural Schools.	Number of teachers.	Male.	Female.	Salaries. Highest salary paid.	Salaries. Average salary male teacher.
1 Brant	70	13	57	$600	$452
2 Bruce	181	51	130	600	402
3 Carleton	138	20	118	600	397
4 Dufferin	94	17	77	500	373
5 Dundas	84	28	56	700	360
6 Durham	108	23	85	525	385
7 Elgin	119	33	86	600	418
8 Essex	120	31	89	600	440
9 Frontenac	146	20	126	500	299
10 Glengarry	77	12	65	550	350
11 Grey	236	54	182	575	401
12 Haldimand	82	14	68	600	391
13 Haliburton, N. E. Muskoka, S. Nipissing and E. Parry Sound	126	16	110	530	373
14 Halton	59	14	45	525	403
15 Hastings	188	48	140	650	374
16 Huron	193	70	123	500	402
17 Kent	141	40	101	700	437
18 Lambton	176	35	141	600	402
19 Lanark	127	11	116	400	325
20 Leeds and Grenville	236	37	199	500	319
21 Lennox and Addington	118	15	103	500	306
22 Lincoln	65	23	42	500	411
23 Middlesex	192	49	143	550	413
24 Norfolk	105	27	78	550	369
25 Northumberland	107	38	69	600	397
26 Ontario	127	27	100	575	427
27 Oxford	131	47	84	700	451
28 Peel	81	21	60	500	393
29 Perth	119	41	78	550	432
30 Peterborough	101	27	74	500	353
31 Prescott and Russell	105	17	88	500	325
32 Prince Edward	79	19	60	625	398
33 Renfrew	152	18	134	485	349
34 Simcoe and W. Muskoka	285	88	197	675	421
35 Stormont	89	17	72	450	347
36 Victoria and S.E. Muskoka	140	24	116	550	403
37 Waterloo	102	39	63	580	424
38 Welland	87	13	74	600	413
39 Wellington	150	37	113	1,200	487
40 Wentworth	92	15	77	615	480
41 York	188	52	136	900	466
42 Algoma and Manitoulin	130	28	102	650	354
43 Nipissing N., etc	82	15	67	600	381
44 Parry Sound W	113	16	97	450	357
45 Rainy River and Thunder Bay	53	20	33	1,000	442
1 Totals, Rural Schools	5,694	1,320	4,374	1,200	402
2 " Cities	1,335	194	1,141	1,600	1,003
3 " Towns	1,127	184	943	1,200	746
4 " Villages	523	141	382	950	592
5 Grand totals, 1905	8,679	1,839	6,840	1,600	514
6 " " 1904	8,610	1,957	6,653	1,600	485
7 Increases	69	.....	187	.....	29
8 Decreases	.....	118	.....	.....	.....
9 Percentages	.....	21.19	78.81	.....	.....

SCHOOLS.—*Continued.*

Salaries, Certificates, Experience, etc.

	Salaries.			Certificates.			
	Average salary female teacher.	Number of University graduates.	Number of teachers who have attended Normal School or Normal College.	Provincial First Class or Interim from Normal College.	Provincial Second Class or Interim from one of the Normal Schools.	Old County Board.	Third Class and renewals of Third Class.
1	$350	.....	41	9	34	.....	27
2	328	.....	63	3	60	1	103
3	330	.....	72	10	62	.....	58
4	321	.....	26	2	24	.....	68
5	301	.....	24	1	23	1	57
6	327	.....	42	5	37	.....	66
7	329	.....	44	9	35	.....	75
8	342	1	36	3	34	3	60
9	250	1	22	1	21	.....	72
10	278	1	13	.....	13	.....	49
11	326	.....	70	8	61	2	141
12	320	1	31	3	29	.....	50
13	257	.....	.....	.....	7	1	23
14	339	.....	25	1	24	.....	34
15	303	.....	49	2	47	1	82
16	329	.....	70	4	67	.....	119
17	366	.....	66	5	60	.....	71
18	345	.....	80	4	76	.....	82
19	263	1	27	.....	27	1	84
20	268	.....	39	2	37	.....	176
21	263	1	21	3	18	1	70
22	303	.....	31	3	27	1	31
23	341	1	97	5	93	.....	92
24	322	.....	38	1	37	.....	56
25	310	.....	44	2	43	1	60
26	328	.....	48	.....	48	.....	77
27	340	.....	67	7	60	1	62
28	329	.....	36	1	35	.....	45
29	339	1	55	1	54	.....	64
30	289	.....	29	.....	29	.....	43
31	264	.....	9	.....	10	.....	41
32	305	1	20	2	19	.....	53
33	278	.....	11	1	10	.....	83
34	308	.....	49	3	55	1	175
35	293	.....	14	3	10	1	63
36	296	.....	35	1	34	.....	58
37	341	.....	46	3	44	1	50
38	316	1	34	5	25	2	51
39	346	1	69	6	63	.....	72
40	339	.....	57	16	41	.....	35
41	336	.....	117	5	113	2	68
42	321	1	19	1	18	2	18
43	284	.....	12	1	11	.....	10
44	257	.....	6	.....	6	.....	13
45	376	.....	13	1	12	.....	17
1	311	12	1,817	143	1,693	23	2,904
2	503	33	1,292	272	1,024	11	28
3	344	22	928	162	802	20	109
4	316	10	405	72	333	8	95
5	348	77	4,442	649	3,852	62	3,136
6	335	86	4,564	625	4,032	59	3,288
7	13	.....	.....	24	.....	3	.....
8	.....	9	122	.....	180	.....	152
9	.....	.88	51.18	7.48	44.38	.72	36.13

THE PUBLIC

III.—Table C.—Teachers,

Rural Schools.	Certificates.—*Con.*		Experience.		
	District.	Temporary.	Number of teachers who at end of year have taught less than 1 year.	No. who have taught 1 year but less than 2.	No. who have taught 2 years but less than 4.
1 Brant	.....	.....	6	10	21
2 Bruce	.....	14	10	55	53
3 Carleton	.....	8	13	21	39
4 Dufferin	.....	.....	2	18	41
5 Dundas	1	1	2	16	38
6 Durham	.....	.....	5	25	32
7 Elgin	.....	.....	3	31	46
8 Essex	7	13	13	30	31
9 Frontenac	10	42	10	45	47
10 Glengarry	5	10	3	21	18
11 Grey	4	20	14	47	88
12 Haldimand	.....	.....	.....	16	30
13 Haliburton, N.E. Muskoka, S. Nipissing and E. Parry Sound	55	40	26	27	32
14 Halton	.....	.....	4	10	14
15 Hastings	25	31	21	29	58
16 Huron	.....	3	11	46	70
17 Kent	.....	5	15	28	37
18 Lambton	2	12	10	43	56
19 Lanark	1	14	3	22	35
20 Leeds and Grenville	12	9	8	58	86
21 Lennox and Addington	2	24	15	29	26
22 Lincoln	3	.....	3	14	20
23 Middlesex	.....	2	4	45	62
24 Norfolk	1	10	2	18	32
25 Northumberland	.....	1	7	23	30
26 Ontario	.....	2	13	20	30
27 Oxford	.....	1	2	30	40
28 Peel	.....	.....	2	18	29
29 Perth	.....	.....	1	25	41
30 Peterborough	10	19	14	15	32
31 Prescott and Russell	49	5	9	26	23
32 Prince Edward	.....	5	1	14	29
33 Renfrew	29	29	4	29	46
34. Simcoe and W. Muskoka	42	9	18	59	103
35 Stormont	8	4	1	20	30
36 Victoria and S.E. Muskoka	21	26	7	25	43
37 Waterloo	2	2	11	15	27
38 Welland	2	2	8	16	19
39 Wellington	.....	9	11	25	43
40 Wentworth	.....	.....	5	20	19
41 York	.....	.....	7	38	39
42 Algoma and Manitoulin	46	45	23	28	32
43 Nipissing, N., etc	19	41	13	14	22
44 Parry Sound W	49	45	21	21	34
45 Rainy River and Thunder Bay	7	16	3	10	14
1 Totals, Rural Schools	412	519	384	1,195	1,737
2 " Cities	.....	.....	37	64	97
3 " Towns	19	15	21	32	127
4 " Villages	11	4	16	35	101
5 Grand totals, 1905	442	538	458	1,326	2,062
6 " " 1904	.....	360	.....	.....	.....
7 Increases	.....	178	.....	.....	.....
8 Decreases	.....	.....	.....	.....	.....
9 Percentages	5.09	6.20	5.28	15.28	23.76

SCHOOLS.—*Continued.*

Salaries, Certificates, Experience, etc.—*Concluded.*

	Experience.						
	No. who have taught 4 years but less than 7.	No. who have taught 7 years but less than 12.	No. who have taught 12 years but less than 20.	No. who have taught 20 years and over.	Average experience in years of male teachers.	Average experience in years of female teachers.	Average experience in years of all teachers.
1	10	10	11	2	11	5	6
2	31	23	7	2	4	4	4
3	35	23	6	1	4	4	4
4	18	13	1	1	4	4	4
5	8	14	3	3	6	4	5
6	23	13	8	2	5	4	4
7	16	15	5	3	6	3	4
8	16	10	10	10	10	5	6
9	27	12	4	1	5	3	3
10	13	12	5	5	8	5	6
11	49	21	7	10	8	3	4
12	18	14	3	1	5	4	4
13	31	9	1	.....	4	3	3
14	18	5	6	2	6	5	5
15	37	29	9	5	8	4	5
16	24	25	7	10	7	3	4
17	34	17	5	5	6	4	5
18	32	23	8	4	4	4	4
19	36	21	9	1	6	5	5
20	42	23	18	1	4	4	4
21	27	14	4	3	5	4	4
22	10	10	3	5	8	5	6
23	37	21	19	4	6	4	5
24	25	18	7	3	7	4	5
25	21	16	5	5	6	5	5
26	33	17	9	5	5	4	5
27	21	18	12	8	9	4	6
28	13	10	6	3	7	4	5
29	22	17	6	7	8	4	5
30	19	11	7	3	6	4	4
31	29	12	5	1	2	4	4
32	13	13	6	3	7	5	5
33	37	29	5	2	7	4	4
34	60	20	16	9	7	3	4
35	20	10	6	2	5	4	5
36	27	26	7	5	8	4	5
37	23	11	11	4	8	4	6
38	23	13	4	4	10	4	5
39	30	22	13	6	8	4	5
40	22	15	8	3	12	4	6
41	43	21	27	13	10	5	6
42	27	14	2	4	6	3	4
43	15	12	4	2	7	4	4
44	17	15	4	1	4	4	4
45	6	13	5	2	7	4	6
1	1,138	730	334	176	6.9	4.1	4.7
2	218	264	360	295	14.8	11.9	12.4
3	235	300	243	169	17.1	10.1	11.3
4	120	111	79	61	13.4	7.5	9.1
5	1,711	1,405	1,016	701	9.3	6.4	7.0
6	.....	.....	.....	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....
9	19.71	16.19	11.71	8.07	.....	.....	.....

THE PUBLIC

IV.—Table D.—School

Totals.	School Houses.					School Visits.				
	Number of Schools.	Brick.	Stone.	Frame.	Log.	By Inspector.	By Trustees.	By Clergymen.	By Other Persons.	Total.
1 Rural Schools	5,214	2,271	491	2,218	234	10,207	5,833	3,105	16,878	36,023
2 Cities	179	158	17	4	.....	3,381	1,977	583	12,546	18,487
3 Towns	246	165	27	54	.....	1,916	1,980	373	3,162	7,431
4 Villages	154	126	12	16	.....	835	717	323	4,342	6,217
5 Grand Totals, 1905	5,793	2,720	547	2,292	234	16,339	10,507	4,384	36,928	68,158
6 Grand Totals, 1904	5,758	2,659	465	2,348	286	15,677	10,181	3,856	36,439	66,153
7 Increases	35	61	82	.....	.....	662	326	528	489	2,005
8 Decreases	.....	.....	.....	56	52	.....	.....	.....	.....	.....
9 Percentages	.....	46.95	9.44	39.57	4.04	23.97	15.42	6.43	54.18	.....

* In addition, there were set out 15,291 flowers and plants in the City of Toronto.
† To each school.

SCHOOLS.—*Continued.*

Houses, Prayers, etc.

Maps & Globes.		Examinations. Prizes.		Lectures.							
Number of Maps.	Number of Globes.	Number of Schools holding public examinations.	Number of Schools distributing prizes or merit cards.	By Inspector.	By Other Persons.	Total.	Number of trees planted on Arbor Day.	Number of Schools using authorized Scripture readings.	Number of Schools opened or closed with prayer.	Number of Schools using the Bible.	Number of Schools imparting religious instruction.
44,664	4,479	1,987	639	654	104	758	5,947	2,864	5,003	2,325	1,247
6,542	284	105	114	9	50	59	*6	48	176	164	5
2,747	327	69	19	98	68	166	37	101	236	148	22
1,823	119	52	22	66	79	145	187	80	139	67	26
55,776	5,209	2,213	794	827	301	1,128	6,177	3,093	5,554	2,704	1,300
55,897	5,498	2,324	724	947	354	1,301	5,552	3,211	5,384	2,537	1,039
.....	.....	.....	70	.....	.....	...	625	..	170	167	261
121	•289	111	.....	120	53	173	.....	118	.....	.....	.....
69.63	+ .9	38.37	13.7	73.32	26.68	.....	.....	53.4	95.53	46.67	22.44

THE PUBLIC

V.—Table E.—

	Counties (including incorporated villages, but not cities or towns), etc.	Receipts. Legislative grants.	Municipal grants and assessments.	Clergy Reserve Fund, balances and other sources.	Total receipts for all Public School purposes.
		$ c.	$ c.	$ c.	$ c.
1	Brant	2,334 97	30.070 50	22,969 99	55,375 46
2	Bruce	7,570 30	94,124 47	51,192 37	152,887 14
3	Carleton	5,397 17	69,423 38	22,002 05	96,822 60
4	Dufferin	3,207 23	45,978 60	23,697 91	72,883 74
5	Dundas	3,407 72	42,269 60	12,113 71	57,791 03
6	Durham	3,075 50	47,190 56	22,796 95	73,063 01
7	Elgin	5,144 82	56,166 10	34,286 13	95,597 05
8	Essex	4,258 90	54,551 77	25,345 10	84,155 77
9	Frontenac	4,435 00	42,404 76	15,683 51	62,523 27
10	Glengarry	2,702 50	27,744 15	15,181 36	45,628 01
11	Grey	7,976 06	106,476 63	58,002 75	172,455 44
12	Haldimand	3,086 59	38,595 00	19,413 70	61,095 29
13	Haliburton, etc.	11,949 15	26,947 50	13,693 03	52,589 68
14	Halton	2,811 41	28,773 92	17,737 28	49,322 61
15	Hastings	8,358 02	79,395 23	28,786 18	116,539 43
16	Huron	8,264 16	94,181 64	44,822 62	147,268 42
17	Kent	6,514 25	69,362 75	47,135 13	123,012 13
18	Lambton	7,308 03	90,511 97	37,351 12	135,171 12
19	Lanark	4,115 00	39,051 75	15,457 11	58,623 86
20	Leeds and Grenville	7,342 19	90,309 51	35,697 45	133,349 15
21	Lennox and Addington	3,579 94	35,982 51	15,866 76	55,429 21
22	Lincoln	3,085 72	38,779 52	31,891 70	73,756 94
23	Middlesex	7,099 06	91,261 81	44,916 47	143,277 34
24	Norfolk	3,791 68	45,714 67	29,400 27	78,906 62
25	Northumberland	4,080 00	51,615 04	23,069 75	78,764 79
26	Ontario	5,603 75	59,225 24	26,257 64	91,086 63
27	Oxford	5,040 80	65,246 42	49,038 72	119,325 94
28	Peel	2,834 60	37,393 92	19,724 52	59,953 04
29	Perth	4,351 00	56,878 08	24,407 23	85,636 31
30	Peterborough	4,354 61	39,446 23	13,428 04	57,228 88
31	Prescott and Russell	3,737 23	38,484 84	16,162 02	58,384 09
32	Prince Edwa.d	2,373 50	29,645 30	15,839 21	47,858 01
33	Renfrew	7,003 82	52,580 99	17,676 23	77,261 04
34	Simcoe and W. Muskoka	15,854 78	118,997 94	65,340 19	200,192 91
35	Stormont	2,955 17	32,439 04	7,088 10	42,482 31
36	Victoria and S. E. Muskoka	8,458 11	56,121 53	19,090 53	83,670 17
37	Waterloo	4,179 61	53,770 10	57,862 63	115,812 34
38	Welland	3,324 00	37,708 28	22,352 52	63,384 80
39	Wellington	6,541 27	82,272 40	56,509 35	145,323 02
40	Wentworth	3,724 90	42,484 48	34,091 87	80,301 25
41	York	7,724 95	107,293 77	77,831 64	192,850 36
42	Algoma and Manitoulin	15,064 00	41,102 77	24,989 32	81,156 09
43	Nipissing, N., etc	8,815 00	23,088 25	8,704 55	40,607 80
44	Parry Sound, W	10,804 50	24,809 38	8,451 91	44,065 79
45	Rainy River and Thunder Bay	5,865 00	24,161 44	6,890 85	36,917 29
46	Albany and Moose Fort	200 00	.....	.....	200 00
	Totals	259,705 97	2,460,033 74	1,280,247 47	3,999,987 18
	Totals Incorporated Villages	20,545 83	248,565 68	133,638 25	402,749 76
	Totals Rural Schools	239,160 14	2,211,468 06	1,146,609 22	3,597,237 42

SCHOOLS.—*Continued.*

Financial Statement.

Expenditure.

	Teachers' salaries.	Sites and building school houses.	Libraries, maps, apparatus, prizes & school books.	Rent and repairs, fuel and other expenses.	Total expenditure for all Public School purposes.	Balances.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1	25,923 86	555 78	688 18	9,706 65	36,874 47	18,500 99
2	75,308 23	12,582 47	1,379 57	26,659 85	115,930 12	36,957 02
3	50,106 11	14,866 71	1,399 01	19,318 51	85,690 34	11,132 26
4	34,313 31	6,663 92	1,797 24	15,254 47	58,028 94	14,854 80
5	35,136 92	1,948 14	450 68	10,756 77	48,292 51	9,498 52
6	38,606 45	5,361 27	287 97	12,162 47	56,418 16	16,644 85
7	45,804 34	2,249 47	1,150 99	18,342 27	67,547 07	28,049 98
8	41,763 06	3,648 13	618 41	16,610 32	62,639 92	21,515 85
9	35,591 30	2,105 71	700 91	10,043 50	48,441 42	14,081 85
10	24,553 90	5,544 66	145 43	6,875 09	37,119 08	8,508 93
11	83,826 72	22,605 40	2,385 29	32,838 11	141,655 52	30,799.92
12	32,020 47	1,559 71	138 54	9,874 05	43,592 77	17,502 52
13	30,060 32	4,715 65	671 51	8,632 80	44,080 28	8,509 40
14	27,373 85	921 55	566 63	10,492 99	39,355 02	9,967 59
15	64,414 99	9,311 73	2,896 40	17,973 49	94,596 61	21,942 82
16	79,808 01	10,654 00	1,200 94	25,878 81	117,541 76	29,726 66
17	55,658 47	3,036 61	1,164 97	17,788 06	77,648 11	45,364 02
18	73,064 39	4,680 74	1,685 86	24,210 13	103,641 12	31,530 00
19	35,405 29	1,372 53	303 52	7,732 42	44,813 76	13,810 10
20	74,019 47	12,545 43	1,979 28	21,279 87	109,824 05	23,525 10
21	32,418 78	1,455 63	527 30	8,812 47	43,214 18	12,215 03
22	29,050 55	15,965 21	951 52	10,697 29	56,664 57	17,092 37
23	73,259 61	2,398 10	1,188 21	26,385 74	103,231 66	40,045 68
24	39,784 40	724 73	444 85	9,961 09	50,915 07	27,991 55
25	42,237 78	1,670 64	936 42	14,721 81	59,566 65	19,198 14
26	49,520 10	1,570 22	953 34	19,496 53	71,540 19	19,546 44
27	82,731 33	7,235 20	1,030 09	19,019 23	110,015 85	9,310 09
28	30,781 02	2,564 62	503 86	14,045 88	47,895 38	12,057 66
29	45,641 44	2,401 33	814 44	16,728 24	65,585 50	20,050 81
30	34,312 20	2,713 41	1,156 33	9,045 15	47,227 09	10,001 79
31	32,063 22	3,807 41	691 36	10,227 28	46,789 27	11,594 82
32	26,482 30	4,644 13	306 91	7,474 78	38,908 12	8,949 89
33	44,248 66	6,216 44	1,259 34	12,351 29	64,075 73	13,185 31
34	101,280 21	18,416 20	3,267 63	31,401 26	154,365 30	45,827 61
35	27,226 53	4,001 55	161 95	5,961 58	37,351 61	5,130 70
36	48,289 23	3,205 02	1,170 33	16,168 55	68,833 13	14,837 04
37	44,505 59	8,321 14	445 74	15,689 89	68,962 36	46,849 98
38	34,808 03	1,530 98	561 14	9,283 75	46,183 90	17,200 90
39	67,055 06	12,926 89	2,574 04	28,058 48	110,614 47	34,708 55
40	35,255 57	5,424 96	749 08	12,588 52	54,018 13	26,283 12
41	78,936 59	19,933 98	2,366 21	39,833 53	141,070 31	51,780 05
42	37,747 26	9,488 67	1,150 49	15,978 48	64,364 90	16,791 19
43	19,726 45	5,838 60	840 21	7,936 36	34,341 62	6,266 18
44	26,752 71	2,401 37	420 91	8,722 29	38,297 28	5,768 51
45	19,154 63	5,023 14	698 90	6,946 92	31,823 59	5,093 70
46	200 00	.....	.....	.....	200 00	.....
	2,066,228 71	276,809 23	46,781 93	699,967 02	3,089,786 89	910,200 29
	201,877 25	62,411 22	4,561 09	76,355 16	345,204 72	57,545 04
	1,864,351 46	214,398 01	42,220 84	623,611 86	2,744,582 17	852,655 25

THE PUBLIC

V.—Table E.—

Cities.	Receipts. Legislative grants.	Municipal grants and assessments.	Clergy Reserve Fund, balances and other sources.	Tota. receipts for all Public School purposes.
	$ c.	$ c.	$ c.	$ c.
1 Belleville	880 00	12,101 74	594 92	13,576 66
2 Brantford	2,626 99	40,825 00	3,936 49	47,388 48
3 Chatham	1,321 62	27,247 74	1,048 31	29,617 67
4 Guelph	2,114 73	23,946 25	625 10	26,686 08
5 Hamilton	*7,698 13	126,943 57	18,758 21	153,399 91
6 Kingston	2,270 72	28,686 00	2,024 93	32,981 65
7 London	†6,947 35	103,994 12	652 63	111,594 10
8 Niagara Falls	824 00	11,400 00	879 49	13,103 49
9 Ottawa	*5,856 44	207,426 00	7,982 28	221,264 72
10 Peterborough	1,448 03	24,000 00	8,092 40	33,540 43
11 St. Catharines	1,199 00	15,873 00	237 24	17,309 24
12 St. Thomas	1,657 00	24,943 82	344 02	26,944 84
13 Stratford	*1,891 94	18,500 00	19,519 08	39,911 02
14 Toronto	*31,850 15	731,836 50	17,211 02	780,897 67
15 Windsor	1,544 00	26,808 92	2,601 73	30,954 65
16 Woodstock	1,365 00	15,250 00	2,196 36	18,811 36
Totals	71,495 10	1,439,782 66	86,704 21	1,597,981 97
Towns.				
1 Alexandria	62 00	1,041 90	815 32	1,919 22
2 Alliston	356 00	4,950 00	627 97	5,933 97
3 Almonte	262 00	4,117 02	1,240 05	5,619 07
4 Amherstburg	223 00	3,066 82	946 53	4,236 35
5 Arnprior	277 00	4,079 00	2,703 39	7,059 39
6 Aurora	203 00	2,500 00	762 11	3,465 11
7 Aylmer	282 69	4,657 00	2,918 32	7,858 01
8 Barrie	819 00	12,111 36	2,428 37	15,358 73
9 Berlin	1,417 67	21,932 01	98 97	23,448 65
10 Blenheim	282 00	4,114 63	461 07	4,857 70
11 Bothwell	197 00	955 00	846 12	1,998 12
12 Bowmanville	340 00	4,600 00	180 40	5,120 40
13 Bracebridge	1,445 00	6,550 00	781 01	8,776 01
14 Brampton	505 00	5,200 00	384 38	6,089 38
15 Brockville	1,395 00	15,600 00	639 18	17,634 18
16 Bruce Mines	298 00	1,968 00	14 24	2,280 24
17 Cache Bay	75 00	145 76	2,068 20	2,288 96
18 Carleton Place	490 00	5,050 00	775 60	6,315 60
19 Clinton	422 00	3,200 00	458 51	4,080 51
20 Cobourg	392 14	6,640 00	585 95	7,618 09
21 Collingwood	821 00	14,600 00	429 19	15,850 19
22 Copper Cliff	366 00	3,981 45	979 61	5,327 06
23 Cornwall	754 60	6,150 00	976 90	7,881 50
24 Deseronto	418 00	5,837 36	477 65	6,733 01
25 Dresden	422 00	3,150 00	385 05	3,957 05
26 Dundas	343 00	5,300 00	143 69	5,786 69
27 Dunnville	264 00	3,800 00	9,652 84	13,716 84
28 Durham	611 00	3,419 25	1,587 38	5,617 63
29 East Toronto	377 00	6,759 97	222 77	7,359 74
30 Essex	172 00	1 95	6,573 27	6,747 22

* Grant for Technical Education included. † Including grant to Normal School.

SCHOOLS.—*Continued.*

Financial Statement.—*Continued.*

Expenditure.

	Teachers' salaries.	Sites and building school houses.	Libraries, maps, apparatus, prizes, & school books.	Rent and repairs, fuel and other expenses.	Total expenditure for all Public School purposes.	Balances.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1	9,203 62	.....	.....	3,791 02	12,994 64	582 02
2	22,880 78	4,535 93	2,269 33	17,702 44	47,388 48	.....
3	14,265 29	6,779 07	.....	7,798 56	28,842 92	774 75
4	16,664 03	.....	252 61	9,769 44	26,686 08	.....
5	81,688 33	9,320 47	6,708 38	54,852 73	152,569 91	830 00
6	21,190 38	.....	1,547 62	9,526 32	32,264 32	717 33
7	72,994 70	5,083 81	172 00	31,371 97	109,622 48	1,971 62
8	8,027 25	250 00	76 15	4,432 59	12,785 99	317 50
9	84,377 99	75,789 59	5,000 21	36,917 42	202,085 21	19,179 51
10	18,515 88	13 95	2,565 50	12,445 10	33,540 43	.....
11	10,520 40	200 00	433 59	5,410 22	16,564 21	745 03
12	19,391 67	.....	.....	6,214 59	25,606 26	1,338 58
13	14,558 00	15,812 47	1,849 81	7,690 74	39,911 02	.....
14	451,428 00	138,680 87	5,517 91	176,816 98	772,443 76	8,453 91
15	20,724 50	309 64	190 54	8,343 02	29,567 70	1,386 95
16	12,833 40	.....	1,127 58	4,311 98	18,272 96	538 40
	879,264 22	256,775 80	27,711 23	397,395 12	1,561,146 37	36,835 60
1	817 50	22 35	.....	866 55	1,706 40	212 82
2	2,759 90	2,000 00	.....	856 28	5,616 18	317 79
3	3,670 95	.....	.....	1,641 38	5,312 33	306 74
4	3,025 00	114 56	.....	1,059 77	4,199 33	37 02
5	3,931 08	.....	.....	1,113 98	5,045 06	2,014 33
6	2,391 65	.....	.....	958 99	3,350 64	114 47
7	3,284 00	866 63	93 93	3,148 94	7,393 50	464 51
8	9,420 20	1,290 15	184 13	3,327 21	14,221 69	1,137 04
9	15,593 93	106 94	1,136 59	6,570 32	23,407 78	40 87
10	3,036 96	353 63	84 00	1,076 32	4,550 91	306 79
11	1,683 79	....	26 51	287 82	1,998 12	.....
12	3,750 00	.....	.....	1,370 40	5,120 40	.....
13	4,933 00	.....	14 85	3,798 44	8,746 29	29 72
14	4,160 85	211 33	82 79	1,068 94	5,523 91	565 47
15	10,033 67	280 00	.....	6,305 49	16,619 16	1,015 02
16	1,650 00	.....	.....	584 78	2,234 78	45 46
17	757 64	.....	.....	1,531 32	2,288 96	.....
18	4,412 20	.....	.....	1,862 77	6,274 97	40 63
19	2,980 81	.....	7 50	932 51	3,920 82	159 69
20	4,647 50	.....	.....	2,970 59	7,618 09	.....
21	9,832 07	.....	367 92	4,959 49	15,159 48	690 71
22	2,931 55	13 95	88 00	1,675 42	4,708 92	618 14
23	5,530 16	.....	321 93	2,029 41	7,881 50	.....
24	5,022 62	.....	.....	1,563 78	6,586 40	146 61
25	3,077 05	.....	99 33	723 61	3,899 99	57 06
26	4,430 80	.....	.....	1,142 40	5,573 20	213 49
27	2,679 00	8,508 40	1,424 95	999 36	13,611 71	105 13
28	3,891 60	.....	83 33	1,642 70	5,617 63	.....
29	5,075 00	.....	55 52	1,794 69	6,925 21	434 53
30	2,365 91	3,117 25	.....	1,023 27	6,506 43	240 79

THE PUBLIC

V.—Table E.—

Towns.	Receipts.			
	Legislative grants.	Municipal grants and assessments.	Clergy Reserve fund, balances and other sources.	Total receipts for all Public School purposes.
	$ c.	$ c.	$ c.	$ c.
31 Forest	342 00	2,500 00	879 74	3,721 74
32 Fort Frances	151 00	2,381 50	81 16	2,613 66
33 Fort William	594 00	13,800 00	12,000 00	26,394 00
34 Galt	981 69	26,000 00	197 04	27,178 73
35 Gananoque	610 00	6,934 60	235 60	7,780 20
36 Goderich	573 00	6,665 73	290 75	7,529 48
37 Gore Bay	587 00	4,315 80	242 32	5,145 12
38 Gravenhurst	269 00	4,660 00	.....	4,929 00
39 Haileybury	60 00	875 00	699 00	1,634 00
40 Hanover	332 00	3,800 00	7,690 45	11,822 45
41 Harriston	210 00	2,640 00	287 94	3,137 94
42 Hawkesbury	64 00	2,800 00	836 59	3,700 59
43 Hespeler	297 14	5,107 38	71 65	5,476 17
44 Huntsville	465 00	12,000 00	741 24	13,206 24
45 Ingersoll	696 75	7,513 83	413 17	8,623 75
46 Kincardine	444 00	3,370 00	483 01	4,297 01
47 Kingsville	219 00	3,527 40	243 35	3,989 75
48 Kenora	440 00	9,000 00	1,221 49	10,661 49
49 Leamington	316 00	4,318 00	521 68	5,155 68
50 Lindsay	788 00	11,162 03	1,221 84	13,171 87
51 Listowel	313 01	4,909 00	481 07	5,703 08
52 Little Current	170 00	1,843 00	731 46	2,744 46
53 Massey	70 00	950 14	78 48	1,098 62
54 Mattawa	25 00	1,000 00	65 39	1,090 39
55 Meaford	426 00	4,074 00	220 00	4,720 00
56 Midland	459 00	7,716 00	418 49	8,593 49
57 Milton	524 00	2,391 27	1,080 30	3,995 57
58 Mitchell	229 00	2,771 00	89 95	3,089 95
59 Mount Forest	418 00	3,654 00	765 27	4,837 27
60 Napanee	495 00	4,950 00	943 64	6,388 64
61 New Liskeard	144 00	1,500 00	10,055 20	11,699 20
62 Newmarket	411 00	4,575 00	309 03	5,295 03
63 Niagara	177 00	2,000 11	250 89	2,428 00
64 North Bay	271 00	6,789 00	6,500 12	13,560 12
65 North Toronto	285 00	5,934 72	126 67	6,346 39
66 Oakville	189 00	3,080 00	46 39	3,315 39
67 Orangeville	441 00	5,955 00	86 79	6,482 79
68 Orillia	488 00	9,800 00	6,543 39	16,831 39
69 Oshawa	518 00	7,100 00	506 60	8,124 60
70 Owen Sound	1,282 37	14,851 00	2,249 39	18,382 76
71 Palmerston	422 00	3,600 00	247 54	4,269 54
72 Paris	380 00	5,300 00	40 36	5,720 36
73 Parkhill	137 00	1,738 00	386 82	2,261 82
74 Parry Sound	1,032 00	6,730 50	337 22	8,099 72
75 Pembroke	357 00	6,082 23	.....	6,439 23
76 *Penetanguishene	324 00	4,403 38	304 45	5,031 83
77 Perth	449 00	4,292 49	276 18	5,017 67
78 Petrolea	456 00	9,000 00	158 11	9,614 11
79 Picton	551 59	5,650 00	4,271 84	10,473 43
80 Port Arthur	869 00	13,278 24	1,316 40	15,463 64
81 Port Hope	648 00	7,000 00	552 90	8,200 90

* Including Protestant Separate School.

SCHOOLS.—*Continued.*

Financial Statement.—*Continued.*

Expenditure.

	Teachers' salaries.	Sites and building school houses.	Libraries, maps, apparatus, prizes and school books.	Rent and repairs, fuel and other expenses.	Total expenditure for all Public School purposes.	Balances.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
31	2,665 00	.....	.....	703 89	3,368 89	352 85
32	1,760 00	.....	96 24	472 68	2,328 92	284 74
33	6,103 60	12,000 00	418 26	7,789 35	26,311 21	82 79
34	11,746 11	10,414 45	32 28	4,985 89	27,178 73	.....
35	5,181 81	.....	30 93	2,457 17	7,669 91	110 29
36	4,461 54	1,129 60	157 66	1,780 68	7,529 48	.....
37	2,028 75	1,887 19	91 48	631 30	4,638 72	506 40
38	3,589 74	96 74	88 99	1,085 48	4,860 95	68 05
39	787 65	6 05	.....	808 37	1,602 07	31 93
40	2,887 45	6,354 50	194 66	2,187 48	11,624 09	198 36
41	2,030 00	.....	.....	840 32	2,870 32	267 62
42	1,339 92	500 00	.....	978 85	2,818 77	881 82
43	3,626 51	.....	.....	1,617 41	5,243 92	232 25
44	3,394 27	8,832 68	579 60	227 05	13,033 60	172 64
45	5,729 50	.....	345 88	2,245 74	8,321 12	302 63
46	3,149 00	.....	.....	1,144 33	4,293 33	3 68
47	2,870 90	.....	31 25	1,010 31	3,912 46	77 29
48	7,089 85	717 63	.....	2,741 34	10,548 82	112 67
49	3,236 75	938 63	15 25	922 51	5,113 14	42 54
50	9,630 77	.....	.....	3,541 10	13,171 87	.....
51	3,217 66	.....	12 76	2,472 66	5,703 08	.....
52	1,336 00	.....	78 60	634 34	2,048 94	695 52
53	820 00	36 69	.....	198 12	1,054 81	43 81
54	819 00	.....	.....	271 39	1,090 39	.....
55	3,962 09	.....	.....	750 39	4,712 48	7 52
56	6,037 86	.....	47 53	2,427 07	8,512 46	81 03
57	3,035 55	.....	.....	473 90	3,509 45	486 12
58	2,675 10	24 68	26 29	280 99	3,007 06	82 89
59	3,404 50	.....	.....	1,253 95	4,658 45	178 82
60	4,489 92	.....	8 80	1,622 43	6,121 15	267 49
61	1,628 06	7,578 27	14 02	971 42	10,191 77	1,507 43
62	2,979 00	.....	16 10	1,361 30	4,356 40	938 63
63	1,300 00	.....	20 00	941 47	2,261 47	166 53
64	3,519 70	5,202 50	244 82	2,661 30	11,628 32	4,931 80
65	3,953 17	460 43	222 82	1,519 92	6,156 34	190 65
66	2,275 00	67 00	184 32	582 14	3,108 46	206 93
67	4,100 41	.....	7 94	2,344 95	6,453 30	29 49
68	6,994 45	1 10	55 50	2,783 93	9,834 98	6,996 41
69	5,403 98	980 20	51 30	1,689 12	8,124 60	.....
70	13,043 00	.....	17 05	4,848 31	17,908 36	474 40
71	2,985 00	.....	250 81	935 07	4,170 88	98 66
72	3,976 50	.....	19 95	1,608 44	5,604 89	115 47
73	1,590 36	.....	.....	352 03	1,942 39	319 43
74	5,534 00	47 91	40 00	2,057 57	7,679 48	420 24
75	3,924 67	1,223 66	69 55	1,023 10	6,240 98	198 25
76	3,528 67	270 35	.....	1,024 17	4,823 19	208 64
77	3,637 00	.....	.....	1,262 84	4,899 84	117 83
78	5,503 35	.....	.....	2,846 64	8,349 99	1,264 12
79	4,147 36	10 55	4 04	2,896 07	7,058 02	3,415 41
80	7,159 62	5,598 96	595 45	2,109 61	15,463 64	.....
81	6,402 06	.....	12 25	1,786 59	8,200 90	.....

THE PUBLIC

V.—Table E.—

Towns.—*Concluded*	Receipts. Legislative grants.	Municipal grants and assessments.	Clergy Reserve Fund, balances and other sources.	Total receipts for all Public School purposes.
	$ c.	$ c.	$ c.	$ c.
82 Powassan	162 40	1,200 00	734 35	2,096 75
83 Prescott	444 00	3,775 00	338 63	4,557 63
84 Preston	274 24	4,000 00	382 80	4,657 04
85 Rainy River	171 00	3,500 00	25,261 52	28,932 52
86 Renfrew	385 00	4,815 41	2,065 16	7,265 57
87 Ridgetown	279 00	3,856 35	39 43	4,174 78
88 St. Mary's	418 00	5,572 90	.....	5,990 90
89 Sandwich	98 00	1,500 00	207 70	1,805 70
90 Sarnia	1,050 00	18,930 61	295 82	20,276 43
91 Sault Ste. Marie	1,034 00	13,675 00	273 13	14,982 13
92 Seaforth	211 00	3,000 00	540 92	3,751 92
93 Simcoe	534 62	4,134 46	635 09	5,304 17
94 Smith's Falls	720 00	9,786 99	113 33	10,620 32
95 Southampton	302 00	3,700 00	158 20	4,160 20
96 Stayner	338 00	2,762 00	204 61	3,304 61
97 Steelton	126 00	6,899 87	21,857 36	28,883 23
98 Strathroy	518 00	4,748 00	116 30	5,382 30
99 Sturgeon Falls	133 00	1,687 00	3,030 46	4,850 46
100 Sudbury	315 00	1,550 00	15,875 41	17,740 41
101 Thessalon	238 00	2,400 00	6 80	2,644 80
102 Thornbury	127 00	1,897 73	75	2,025 48
103 Thorold	175 00	3,250 00	41 23	3,466 23
104 Tillsonburg	275 01	5,212 60	13 76	5,501 37
105 Toronto Junction	1,258 31	27,072 00	1,039 25	29,369 56
106 Trenton	371 00	4,335 00	405 45	5,111 45
107 Uxbridge	188 00	2,993 34	38 55	3,219 89
108 Vankleek Hill	239 00	1,806 00	865 44	2,910 44
109 Walkerton	411 00	4,149 34	192 72	4,753 06
110 Walkerville	304 00	7,800 00	50,972 48	59,076 48
111 Wallaceburg	509 06	5,723 39	385 04	6,617 43
112 Waterloo	402 82	6,643 08	140 17	7,186 07
113 Welland	380 88	2,700 00	2,170 01	5,250 89
114 Whitby	398 00	4,550 00	128 56	5,076 56
115 Wiarton	314 00	4,006 00	245 51	4,565 51
116 Wingham	465 00	4,456 51	377 37	5,298 88
Totals	49,261 93	649,856 41	238,115 71	937,234 05
Totals.				
1 Rural Schools	239,160 14	2,211,468 06	1,146,609 22	3,597,237 42
2 Cities	71,495 10	1,439,782 66	86,704 21	1,597,981 97
3 Towns	49,261 93	649,856 41	238,115 71	937,234 05
4 Incorp. Villages	20,545 83	248,565 68	133,638 25	402,749 76
5 Grand Totals, 1905	380,463 00	4,549,672 81	1,605,067 39	6,535,203 20
6 " 1904	372,311 95	4,125,072 99	1,413,551 26	5,910,936 20
7 Increases	8,151 05	424,599 82	191,516 13	624,267 00
8 Decreases	.....	.....	.....	.....
9 Percentages	5.82	69.62	24.56	.....

Cost per pupil, enrolled attendance: Rural Schools, $11.66;

SCHOOLS.—*Concluded.*

Financial Statement.—*Concluded.*

Expenditure.

	Teachers' salaries.	Sites and building school houses.	Libraries, maps, apparatus, prizes & school books.	Rent and repairs, fuel and other expenses.	Total expenditure for all Public School purposes.	Balances.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
82	1,355 70	44 50	23 40	657 60	2,081 20	15 55
83	3,312 00	162 00	41 85	1,039 01	4,554 86	2 77
84	3,310 00	.....	.....	1,304 55	4,614 55	42 49
85	2,080 20	17,582 79	.....	2,295 75	21,958 74	6,973 78
86	3,982 00	26 40	.....	3,257 17	7,265 57	.....
87	3,019 49	.....	81 50	1,044 36	4,145 35	29 43
88	4,054 68	.....	.....	1,774 47	5,829 15	161 75
89	1,025 00	.....	.....	589 21	1,614 21	191 49
90	10,655 40	5,193 75	107 48	3,562 97	19,519 60	756 83
91	9,476 15	175 00	234 45	4,606 76	14,492 36	489 77
92	2,537 50	.....	7 80	1,150 00	3,695 30	56 62
93	4,613 00	2 79	89 90	598 48	5,304 17	.....
94	7,464 65	.....	.....	3,155 67	10,620 32	.....
95	3,214 85	.....	.....	736 15	3,951 00	209 20
96	2,193 70	578 09	8 00	360 89	3,140 68	163 93
97	3,009 40	23,771 98	60 13	1,820 54	28,662 05	221 18
98	3,995 50	.....	44 96	1,211 70	5,252 16	130 14
99	2,110 00	39 50	184 20	2,516 76	4,850 46	.....
100	2,067 70	15,095 01	130 23	447 47	17,740 41	.....
101	1,910 00	.....	.....	462 49	2,372 49	272 31
102	1,500 00	.....	.....	510 37	2,010 37	15 11
103	2,480 52	.....	16 99	930 70	3,428 21	38 02
104	3,409 00	.....	41 00	1,102 38	4,552 38	948 99
105	15,012 15	2,879 96	.....	11,337 56	29,229 67	139 89
106	3,638 03	23 45	50 00	1,270 41	4,981 89	129 56
107	2,575 00	.....	.....	574 57	3,149 57	70 32
108	2,035 00	.....	.....	772 09	2,807 09	103 35
109	3,681 78	.....	9 60	987 19	4,678 57	74 49
110	5,156 38	35,055 84	327 62	1,693 17	42,233 01	16,843 47
111	4,474 94	.....	.....	2,002 66	6,477 60	139 83
112	5,474 87	.....	106 07	1,451 43	7,032 37	153 70
113	2,374 50	193 14	.....	922 73	3,490 37	1,760 52
114	3,835 00	.....	65 55	937 86	4,838 41	238 15
115	3,522 31	86 78	.....	815 57	4,424 66	140 85
116	3,805 88	.....	74 27	1,353 28	5,233 43	65 45
	476,830 83	182,175 94	9,858 66	204,303 38	873,168 81	64,065 24
1	1,864,351 46	214,398 01	42,220 84	623,611 86	2,744,582 17	852,655 25
2	879,264 22	256,775 80	27,711 23	397,395 12	1,561,146 37	36,835 60
3	476,830 83	182,175 94	9,858 66	204,303 38	873,168 81	64,065 24
4	201,877 25	62,411 22	4,561 09	76,355 16	345,204 72	57,545 04
5	3,422,323 76	715,760 97	84,351 82	1,301,665 52	5,524,102 07	1,011,101 13
6	3,246,574 25	442,864 79	80,350 50	1,183,392 84	4,953,182 38	957,753 82
7	175,749 51	272,896 18	4,001 32	118,272 68	570,919 69	53,347 31
8	.....	.....	.....	.....	.....	.....
9	61.95	12.96	1.53	23.56	.....	.....

Cities, $21.94; Towns, $13.80; Villages, $12.61; Province, $13.91.

ROMAN CATHOLIC

I.—Table F.—Financial

Counties, (including incorporated villages, but not cities or towns), etc.	Number of schools.	Receipts. Legislative grants.	Municipal grants and assessments.	Balances, subscribed and other sources.	Total amount received.	Teachers' salaries.
		$ c.	$ c.	$ c.	$ c.	$ c.
1 Bruce	7	461 00	5,336 30	1,367 02	7,164 32	3,890 06
2 Carleton	16	1,033 00	9,945 43	2,176 53	13,154 96	6,128 32
3 Essex	26	1,408 68	14,191 02	3,600 23	19,199 93	10,967 85
4 Frontenac	12	450 00	3,418 24	767 85	4,636 09	2,823 00
5 Grey	7	250 62	2,314 17	1,093 68	3,658 47	2,095 30
6 Hastings	8	232 00	2,389 33	1,216 97	3,838 30	1,856 27
7 Huron	9	300 26	4,639 58	4,493 90	9,433 74	3,104 51
8 Kent	9	344 64	4,520 92	1,941 78	6,807 34	3,538 25
9 Lambton	2	58 00	782 00	151 34	991 34	657 50
10 Lanark	3	173 00	702 32	81 94	957 26	742 50
11 Leeds and Grenville	5	219 00	1,839 06	317 42	2,375 48	1,250 88
12 Lennox and Addington	2	99 00	631 16	71 16	801 32	568 46
13 Lincoln	2	76 00	1,033 88	255 74	1,365 62	800 00
14 Middlesex	6	153 26	2,084 90	566 54	2,804 70	1,765 70
15 Norfolk	1	55 00	573 53	365 98	994 51	365 00
16 Northumberland	6	326 08	2,224 99	1,080 72	3,631 79	1,921 04
17 Ontario	1	70 00	321 80	1,036 83	1,428 63	734 57
18 Peel	1	47 00	226 10	6 98	280 08	250 00
19 Perth	7	244 00	3,477 21	648 92	4,370 13	2,583 21
20 Peterborough	1	24 20	313 20	81 79	419 19	260 00
21 Prescott and Russell	75	2,813 00	27,565 52	13,315 10	43,693 62	21,509 79
22 Renfrew	12	1,051 00	4,278 60	2,747 26	8,076 86	3,312 91
23 Simcoe	2	168 00	1,199 31	224 61	1,591 92	1,125 00
24 Stormont, Dundas and Glengarry	13	764 00	5,437 45	1,408 75	7,610 20	4,959 47
25 Victoria	1	35 00	502 05	251 00	788 05	337 50
26 Waterloo	7	361 00	5,074 71	6,619 79	12,055 50	2,965 51
27 Wellington	8	230 00	3,693 23	1,039 25	4,962 48	2,621 50
28 York	2	55 00	392 33	535 53	982 86	525 00
29 Districts	28	2,598 00	8,062 96	4,645 85	15,306 81	7,217 91
Totals	279	14,099 74	117,171 30	52,110 46	183,381 50	90,877 01
Totals, Incorporated Villages	21	1,257 00	17,603 39	5,333 70	24,194 09	11,216 77
Totals, Rural Schools	258	12,842 74	99,567 91	46,776 76	159,187 41	79,660 24
Cities.						
1 Belleville	3	232 00	1,918 22	215 89	2,366 11	1,360 00
2 Brantford	2	253 00	2,014 67	1,613 83	3,881 50	1,354 16
3 Chatham	1	211 00	2,610 01	275 60	3,096 61	1,399 92
4 Guelph	3	278 00	3,290 45	80 27	3,648 72	1,425 00
5 Hamilton	8	1,135 00	14,013 44	1,568 38	16,716 82	7,926 00
6 Kingston	3	471 00	6,315 36	5,592 14	12,378 50	4,186 95
7 London	7	670 00	9,090 06	136 34	9,896 40	4,066 67
8 Niagara Falls	1	108 00	1,278 25	203 02	1,589 27	600 00
9 Ottawa	25	3,924 00	66,300 00	140,444 14	210,668 14	41,122 66
10 Peterborough	3	509 00	6,169 40		6,678 40	4,064 40
11 St. Catharines	3	265 00	4,101 50	200 00	4,566 50	2,040 00
12 St. Thomas	1	167 00	2,262 86	80 00	2,509 86	1,000 00
13 Stratford	1	258 00	2,622 51	354 80	3,235 31	1,366 68
14 Toronto	22	3,870 00	52,853 80	11,088 34	67,812 14	23,700 00
15 Windsor	2	501 00	7,245 64	8 00	7,754 64	5,960 00
16 Woodstock	1	66 00	560 00	330 00	956 00	650 00
Totals	86	12,918 00	182,646 17	162,190 75	357,754 92	102,222 44

SEPARATE SCHOOLS.

Statement, Teachers, Etc.

	Expenditure.				Balances.	Teachers.				
	Sites and building school houses.	Libraries, maps, apparatus, prizes and school books.	All other purposes.	Total amount expended.		Number of Teachers.	Male.	Female.	Average salary, male.	Average salary, female (in addition members of Religious Orders received free residence).
	$ c.	$ c.	$ c.	$ c.	$ c.				$	$
1	185 50	115 70	1,239 18	5,430 44	1,733 88	15	4	11	397	211
2	1,997 27	129 89	2,607 59	10,863 07	2,291 89	31	1	30	370	211
3	1,678 23	242 71	4,181 12	17,069 91	2,130 02	38	6	32	410	280
4	333 73	163 37	785 63	4,105 73	530 36	12	1	11	250	250
5	16 93	57 33	605 15	2,774 71	883 76	7	.....	7	.....	296
6	773 32	44 20	441 20	3,114 99	723 31	8	.....	8	.....	269
7	3,950 28	191 70	786 86	8,033 35	1,400 39	10	.....	10	.....	309
8	525 22	41 00	1,064 03	5,168 50	1,638 84	12	4	8	418	256
9	84 00	.....	128 50	870 00	121 34	2	.....	2	.....	300
10	4 97	7 02	67 93	822 42	134 84	3	.....	3	.....	247
11	118 90	70	814 30	2,184 78	190 70	7	.....	7	.....	227
12	104 60	10 00	64 26	747 32	54 00	2	.....	2	.....	312
13	328 00	6 00	194 32	1,328 32	37 30	4	.....	4	.....	200
14	80 26	3 00	494 41	2,343 37	461 33	6	.....	6	.....	302
15	.....	.....	92 65	457 65	536 86	1	.....	1	.....	305
16	223 85	109 46	845 84	3,100 19	531 60	7	.....	7	.....	273
17	512 76	.....	60 20	1,307 53	121 10	2	1	1	450	265
18	.....	.....	23 00	273 00	7 08	1	.....	1	.....	250
19	398 30	35 18	720 41	3,737 10	633 03	8	.....	8	.....	322
20	51 58	12 45	40 88	364 91	54 28	1	.....	1	.....	260
21	4,850 43	732 77	6,823 84	33,916 83	9,776 79	98	11	87	275	230
22	503 70	39 00	543 92	4,399 53	3,677 33	15	.....	15	.....	235
23	6 50	30 73	355 70	1,517 93	73 99	4	1	3	450	225
24	793 90	26 63	889 56	6,669 56	940 64	18	1	17	300	272
25	8 75	.....	317 11	663 36	124 69	1	.....	1	.....	375
26	5,134 67	4 67	1,206 05	9,310 90	2,744 60	12	.....	12	.....	252
27	299 47	107 25	1,054 75	4,082 97	879 51	10	.....	10	.....	262
28	74 00	125 96	168 23	893 19	89 67	2	.....	2	.....	212
29	2,716 51	282 72	2,873 88	13,091 02	2,215 79	30	4	26	331	255
	25,755 63	2,519 44	29,490 50	148,642 58	34,738 92	367	34	333	350	250
	2,833 52	251 25	4,465 36	18,766 90	5,427 19	54	.....	54	.....	218
	22,922 11	2,268 19	25,025 14	129,875 68	29,311 73	313	34	279	350	256
1	72 38	.....	717 56	2,149 89	216 22	6	1	5	600	200
2	653 44	.....	1,668 20	3,675 80	205 70	6	.....	6	.....	225
3	520 45	131 42	1,008 74	3,060 53	36 08	7	.....	7	.....	200
4	926 48	160 14	836 53	3,348 15	300 57	8	.....	8	.....	212
5	3,641 32	1,204 35	3,511 53	16,283 20	433 62	36	.....	36	.....	200
6	1,896 08	2,468 24	1,444 29	9,995 56	2,382 94	13	1	12	700	281
7	1,210 67	222 35	4,153 06	9,652 75	243 65	21	.....	21	.....	200
8	114 00	30 00	270 01	1,014 01	575 26	3	.....	3	.....	200
9	142,623 52	3,788 73	22,669 07	210,403 98	264 16	126	38	88	394	257
10	91 40	.....	1,865 14	6,020 94	657 46	15	1	14	650	310
11	1,238 85	.....	1,220 18	4,499 03	67 47	9	1	8	600	180
12	79 00	.....	1,416 56	2,495 56	14 30	5	.....	5	.....	200
13	623 25	88 73	1,141 58	3,220 24	15 07	7	.....	7	.....	200
14	14,967 48	1,838 17	27,306 49	67,812 14	.....	104	26	78	323	200
15	845 00	25 34	924 30	7,754 64	.....	15	.....	15	.....	382
16	.....	.....	306 00	956 00	.....	2	.....	2	.....	325
	169,703 27	9,957 47	70,459 24	352,342 42	5,412 50	383	68	315	381	225

ROMAN CATHOLIC

I.—Table F.—Financial

Towns.	Number of Schools.	Receipts. Legislative grants.	Municipal grants and assessments.	Balances, subscribed and other sources.	Total amount received.	Teachers' salaries.
		$ c.	$ c.	$ c.	$ c.	$ c.
1 Alexandria	2	201 00	3,075 26	375 25	3,651 51	1,875 00
2 Almonte	1	87 00	1,093 38	182 66	1,363 04	891 00
3 Amherstburg	3	239 00	1,033 64	1,782 41	3,055 05	1,166 67
4 Arnprior	2	166 00	2,438 65	666 82	3,271 47	1,470 00
5 Barrie	1	107 00	2,020 40	904 44	3,031 84	900 00
6 Berlin	1	310 00	4,306 33	385 30	5,001 63	2,000 00
7 Brockville	1	255 00	2,415 00	655 96	3,325 96	1,818 00
8 Cobourg	1	142 00	1,000 00	116 50	1,258 50	900 00
9 Cornwall	3	399 00	4,827 91	2,576 83	7,803 74	4,246 50
10 Dundas	1	72 00	785 83	380 95	1,238 78	600 00
11 Fort Frances	1	7 00	707 00	2,107 00	2,821 00	514 00
12 Fort William	1	185 00	1,730 08	.....	1,915 08	850 00
13 Galt	1	61 00	583 60	336 79	981 39	325 00
14 Goderich	1	61 00	611 60	5 97	678 57	425 00
15 Hawkesbury	2	490 00	4,000 00	2,635 93	7,125 93	2,620 00
16 Ingersoll	1	53 00	833 11	55 44	941 55	575 00
17 Kenora	2	110 00	1,974 00	603 81	2,687 81	1,499 00
18 Lindsay	2	214 00	2,599 20	75 58	2,888 78	2,300 00
19 Massey	1	36 00	467 00	2,654 51	3,157 51	250 00
20 Mattawa	1	200 00	2,864 40	138 84	3,203 24	1,582 85
21 Newmarket	1	29 00	298 42	226 24	553 66	300 00
22 North Bay	1	165 00	2,515 00	17,018 26	19,698 26	1,660 76
23 Oakville	1	20 00	291 34	27 00	338 34	275 00
24 Orillia	1	134 00	1,739 81	1,704 33	3,578 14	1,200 00
25 Oshawa	1	54 00	423 57	103 37	580 94	419 00
26 Owen Sound	1	67 00	1,297 74	1,274 60	2,639 34	500 00
27 Paris	1	41 00	469 08	480 58	990 66	400 00
28 Parkhill	1	31 00	357 74	16 38	405 12	340 00
29 Pembroke	1	293 00	3,274 56	593 95	4,161 51	2,693 00
30 Perth	1	142 00	1,135 59	130 75	1,408 34	800 00
31 Picton	1	33 00	553 51	540 00	1,126 51	450 00
32 Port Arthur	1	172 00	1,845 04	2,003 66	4,020 70	1,200 00
33 Prescott	1	117 00	1,376 34	2,309 15	3,802 49	1,266 40
34 Preston	1	58 00	683 38	662 49	1,403 87	521 90
35 Rainy River	1	69 00	400 00	369 83	838 83	475 00
36 Renfrew	2	156 00	2,389 04	934 47	3,479 51	1,450 00
37 St. Mary's	1	46 00	451 05	492 97	990 02	426 45
38 Sandwich	1	140 00	922 94	610 34	1,673 28	825 00
39 Sarnia	2	160 00	1,912 10	614 19	2,686 29	1,260 00
40 Sault Ste. Marie	1	126 00	3,083 98	299 25	3,509 23	1,220 00
41 Seaforth	1	51 00	650 36	250 88	952 24	708 44
42 Steelton	1	79 00	1,600 00	1,127 03	2,806 03	1,261 60
43 Sturgeon Falls	1	153 00	1,083 00	2,777 60	4,013 60	1,320 00
44 Sudbury	1	146 00	2,193 39	716 94	3,056 33	1,333 75
45 Thorold	1	71 00	810 00	35 79	916 79	600 00
46 Trenton	1	110 00	1,264 12	352 80	1,726 92	467 54
47 Vankleek Hill	1	113 00	914 00	407 85	1,434 85	1,000 00
48 Walkerton	1	114 00	817 52	93 08	1,024 60	600 00
49 Walkerville	1	65 00	650 00	2 00	717 00	400 00
50 Wallaceburg	1	58 00	3,037 60	7,230 95	10,326 55	800 00
51 Waterloo	1	83 00	1,219 40	6,837 81	8,140 21	500 00
52 Whitby	1	32 00	273 80	146 71	452 51	325 00
Totals	63	6,523 00	79,299 81	67,032 24	152,855 05	53,806 86
Totals.						
1 Rural Schools	258	12,842 74	99,567 91	46,776 76	159,187 41	79,660 24
2 Cities	86	12,918 00	182,646 17	162,190 75	357,754 92	102,222 44
3 Towns	63	6,523 00	79,299 81	67,032 24	152,855 05	53,806 86
4 Villages	21	1,257 00	17,603 39	5,333 70	24,194 09	11,216 77
5 Grand totals, 1905	428	33,540 74	379,117 28	281,333 45	693,991 47	246,906 31
6 " " 1904	419	33,049 76	339,154 15	187,431 34	559,635 25	227,136 29
7 Increases	9	490 98	39,963 13	93,902 11	134,356 22	19,770 02
8 Decreases	.....	.....	.....	.....	.....	.....
9 Percentages	.....	4 83	54.63	40.54	.....	38.75

Cost per pupil, enrolled attendance; Rural Schools $8.51; Cities, $18.24;

SEPARATE SCHOOLS—*Continued.*

Statement, Teachers, etc.—*Concluded.*

	Expenditure.					Teachers.				
	Sites and building school houses.	Libraries, maps, apparatus, prizes and school books.	All other purposes.	Total amount expended.	Balances	Number of teachers.	Male.	Female.	Average salary, male.	Average salary, female. (In addition members of Religious Orders received free residence.)
	$ c.	$ c.	$ c.	$ c.	$ c.				$	$
1	.....	.....	1,763 43	3,638 43	13 08	9	.....	9	.....	208
2	197 00	30 00	245 04	1,363 04	.....	3	.....	3	.....	330
3	33 00	25 00	1,800 22	3,024 89	30 16	7	.....	7	.....	228
4	458 51	....	944 71	2,873 25	398 22	7	1	6	500	200
5	1,420 97	7 18	438 77	2,766 92	264 92	4	.....	4	.....	225
6	1,581 46	140 89	1,254 19	4,976 54	25 09	10	.....	10	.....	200
7	....	42 88	679 11	2,539 99	785 97	8	.....	8	.....	225
8	.....	.....	338 16	1,238 16	20 34	1	.....	4	.....	225
9	53 68	31 79	3,211 39	7,543 36	200 38	15	1	14	720	244
10	229 00	.....	204 02	1,033 02	205 76	3	.....	3	.....	200
11	1,906 13	255 00	130 00	2,805 13	15 87	1	.....	1	.....	450
12	242 00	.....	823 08	1,915 08	.....	4	.....	4	.....	300
13	339 00	.....	202 33	866 33	115 06	1	.....	1	.....	325
14	.....	.....	199 81	624 81	53 76	2	.....	2	.....	212
15	2,300 76	.....	1,742 77	6,663 53	462 40	15	.....	15	.....	200
16	75 00	10 00	240 81	900 81	40 74	2	.....	2	.....	287
17	539 29	25 60	620 69	2,684 58	3 23	4	1	3	400	253
18	.....	.....	537 28	2,837 28	51 50	7	1	6	750	258
19	2,065 66	....	716 20	3,031 86	125 65	2	.....	2	.....	350
20	679 45	....	919 11	3,181 41	21 83	5	1	4	750	225
21	.....	.....	150 00	450 00	103 66	1	.....	1	.....	300
22	16,857 06	.....	1,180 44	19,698 26	.....	6	.....	6	.....	308
23	.....	.....	42 50	317 50	20 84	1	.....	1	.....	275
24	.....	67 52	488 87	1,756 39	1,821 75	4	.....	4	.....	300
25	.....	.....	161 94	580 94	.....	2	.....	2	.....	200
26	228 80	4 50	164 35	897 65	1,741 69	2	.....	2	.....	250
27	.....	.....	92 84	492 84	497 82	2	.....	2	.....	200
28	.....	20 00	45 07	405 07	05	1	.....	1	.....	340
29	382 23	126 60	660 73	3,862 56	298 95	10	1	9	500	214
30	215 54	25 00	367 80	1,408 34	.....	4	.....	4	.....	200
31	.....	11 14	77 87	539 01	587 50	2	.....	2	.....	225
32	1,303 70	....	1,232 45	3,736 15	284 55	4	.....	4	....	300
33	20	.....	1,136 03	2,402 63	1,399 86	4	.....	4	.....	250
34	.....	.....	322 70	844 60	559 27	2	.....	2	.....	260
35	97 00	1 03	260 59	833 62	5 21	1	1	.....	550	.....
36	22 60	19 38	1,458 71	2,950 69	528 82	6	.....	6	.....	242
37	277 80	.....	84 40	788 65	201 37	1	.....	1	....	400
38	448 35	.....	399 93	1,673 28	.....	4	.....	4	.....	206
39	310 00	.....	230 00	1,800 00	886 29	5	.....	5	.....	285
40	50 00	34 25	1,172 24	2,476 49	1,032 74	4	.....	4	.....	305
41	.....	.....	132 14	840 58	111 66	2	.....	2	.....	300
42	.....	136 33	894 30	2,292 23	513 80	4	.....	4	.....	350
43	753 24	292 12	1,648 24	4,013 60	.....	6	2	4	300	200
44	1,127 43	.....	273 02	2,734 20	322 13	5	.....	5	.....	275
45	26 00	38 00	240 15	904 15	12 64	3	.....	3	.....	200
46	175 00	.....	761 32	1,408 86	323 06	4	.....	4	.....	175
47	.....	18 31	.....	1,018 31	416 54	5	.....	5	.....	200
48	20 00	13 90	389 65	1,022 65	1 95	4	.....	4	.....	150
49	.....	.....	135 96	535 96	181 04	2	.....	2	.....	200
50	6,225 00	.....	1,410 90	8,435 90	1,890 65	2	.....	2	.....	400
51	7,265 97	5 15	369 09	8,140 21	.....	3	.....	3	.....	167
52	.....	.....	59 55	384 55	67 96	1	.....	1	.....	325
	47,906 83	1,380 67	33,054 93	136,149 29	16,705 76	220	9	211	530	240
1	22,922 11	2,268 19	25,025 14	129,875 68	29,311 73	313	34	279	350	256
2	169,703 27	9,957 47	70,459 24	352,342 42	5,412 50	383	68	315	381	225
3	47,906 83	1,380 67	33,054 93	136,149 29	16,705 76	220	9	211	530	240
4	2,833 52	251 25	4,465 36	18,766 90	5,427 19	54	.....	54	.....	218
5	243,365 73	13,857 58	133,004 67	637,134 29	56,857 18	970	111	859	384	238
6	135,790 89	7,646 85	135,737 17	506,311 20	53,324 05	944	118	826	384	234
7	107,574 84	6,210 73	.....	130,823 09	3,533 13	26	.....	33	.....	4
8	.....	.....	2,732 50	.....	.....	.....	7	.....	.....	.....
9	38.20	2.17	20.88	.....	.....	.....	11.44	88.56	.....	.....

Towns, $11.57 ; Villages, $6.31 ; Province, $12.92.

ROMAN CATHOLIC

II. Table G.—Attendance, pupils in the

Counties, (including incorporated villages, but not cities or towns) etc.	Number of pupils.	Boys.	Girls.	Average daily attendance.	Percentage of average to total attendance.	Reading. First Reader Part. I	Reading. First Reader Part II.	Reading. Second Reader.	Reading. Third Reader.	Reading. Fourth Reader.	Reading. Fifth Reader.	Art.	Geography.	Music.
1 Bruce	743	394	349	526	70	144	105	162	168	160	4	599	543	646
2 Carleton	1,637	749	888	984	60	554	287	277	273	236	10	926	869	635
3 Essex	2,160	1,162	998	1,272	59	742	328	407	379	295	9	1,988	1,186	1,411
4 Frontenac	393	200	193	215	44	93	50	58	82	100	10	241	275	217
5 Grey	263	120	143	121	46	50	40	47	63	56	7	227	183	23
6 Hastings	299	148	151	137	46	76	45	56	59	54	9	242	172	148
7 Huron	444	222	222	259	58	91	61	81	69	110	32	341	302	322
8 Kent	566	284	282	299	53	201	74	100	90	81	20	440	288	125
9 Lambton	68	34	34	34	50	12	12	8	14	21	1	68	49	68
10 Lanark	95	50	45	51	54	22	17	22	21	11	2	52	75	27
11 Leeds and Grenville	226	109	117	121	53	46	28	27	42	36	47	167	140	130
12 Lennox & Addington	77	36	41	42	54	12	9	14	19	23	.....	56	55	.....
13 Lincoln	148	67	81	103	70	39	17	26	36	30	.....	148	114	148
14 Middlesex	148	81	67	89	60	24	14	35	21	46	8	124	100	92
15 Norfolk	78	30	48	51	65	15	7	14	13	20	9	.....	56	78
16 Northumberland	231	111	120	151	65	63	21	35	47	59	6	221	185	167
17 Ontario	79	29	50	43	54	11	6	16	27	12	7	79	79	33
18 Peel	19	9	10	11	58	3	3	3	6	4	.....	.....	10	.....
19 Perth	406	223	183	248	61	70	38	77	98	119	4	292	303	170
20 Peterborough	34	19	15	18	53	6	7	5	5	11	.....	34	21	.....
21 Prescott & Russell	5,697	2,792	2,905	3,192	56	2,400	1,165	1,070	679	380	3	1,715	2,825	742
22 Renfrew	770	390	380	397	52	247	127	137	142	76	41	587	490	339
23 Simcoe	166	83	83	101	61	63	15	25	26	32	5	166	166	131
24 Stormont, Dundas Glengarry	969	470	499	489	50	386	150	158	131	127	17	479	537	272
25 Victoria	57	34	23	35	61	6	9	7	16	17	2	57	42	57
26 Waterloo	557	285	272	353	63	116	89	148	109	89	6	557	364	392
27 Wellington	415	212	203	250	60	71	66	76	88	108	6	407	333	232
28 York	108	59	49	60	55	38	17	42	7	4	.....	29	53	79
29 Districts	1,386	693	693	665	48	700	264	240	145	37	.....	203	421	84
Totals	18,239	9,095	9,144	10,311	56	6,301	3,071	3,373	2,875	2,354	265	10,445	10,236	6,768
Totals Incorp. Villages	2,976	1,411	1,565	1,877	63	912	504	566	557	366	91	2,313	2,034	1,366
Totals Rural Schools	15,263	7,684	7,579	8,434	55	5,389	2,567	2,807	2,338	1,988	174	8,132	8,202	5,402
Cities.														
1 Bellville	375	213	162	247	66	78	68	63	81	85	.....	375	229	375
2 Brantford	355	205	150	262	74	63	50	81	89	72	.....	355	242	.....
3 Chatham	350	176	174	228	65	110	48	47	85	60	.....	350	350	350
4 Guelph	407	205	202	302	74	73	65	98	92	79	.....	407	271	407
5 Hamilton	1,732	868	864	1,223	71	531	257	284	335	217	108	1,732	1,529	1,732
6 Kingston	810	409	401	624	77	161	109	136	182	172	50	810	649	810
7 London	798	413	385	640	80	185	113	169	163	168	.....	798	798	798
8 Niagara Falls	154	89	65	100	65	41	12	33	32	36	.....	101	101	154
9 Ottawa	6,013	2,999	3,014	4,359	72	1,707	1,108	1,342	936	680	240	5,370	4,171	3,975
10 Peterborough	838	377	461	593	71	196	127	152	218	145	.....	838	553	503
11 St. Catharines	334	167	167	251	75	89	39	54	72	80	.....	334	243	231
12 St. Thomas	229	120	109	185	81	40	51	51	41	46	.....	229	229	229
13 Stratford	384	187	197	263	68	83	54	98	48	101	.....	384	384	384
14 Toronto	5,544	2,881	2,663	3,709	67	1,427	661	1,253	1,135	775	293	5,544	4,117	5,544
15 Windsor	901	446	455	661	73	212	154	268	114	153	.....	821	821	120
16 Woodstock	96	52	44	60	62	21	16	18	16	25	.....	96	96	96
Totals	19,320	9,807	9,513	13,707	71	5,017	2,932	4,147	3,639	2,894	691	18,544	14,783	15,708

SEPARATE SCHOOLS.—*Continued*

various branches of instruction, etc.

	Literature.	Composition.	Grammar.	English History.	Canadian History.	Physiology and Hygiene.	Nature Study.	Physical Culture.	Book-keeping.	Algebra.	Geometry	Latin.	French.	German.	Elementary Science.	Commercial Subjects.	Agriculture.	Manual Training.	Maps and Prizes. Number of Maps.	Number of Schools giving prizes.	Number of trees planted on Arbor Day.
1	451	604	413	146	291	249	437	571	8	4	4	....	....	489	40	....	30	....	57	4	....
2	766	906	817	333	534	467	798	398	19	19	9	....	874	....	210	....	99	98	98	9	54
3	932	1,256	1,085	470	645	1,020	1,362	1,365	122	8	8	....	941	....	54	6	119	78	195	11	69
4	218	276	250	144	173	162	196	264	12	11	9	4	4	....	14	3	24	2	58	3	....
5	135	208	150	74	120	150	136	102	8	5	5	....	....	....	2	6	7	....	58	2	2
6	177	230	168	58	121	98	51	126	7	8	8	....	....	....	....	7	25	....	50	1	9
7	299	338	259	158	175	219	331	310	32	32	32	13	4	....	....	4	13	....	74	6	29
8	162	326	286	116	178	181	157	380	19	15	15	1	171	....	39	3	39	83	61	5	12
9	41	56	47	42	42	41	68	68	1	1	1	....	....	....	....	....	....	....	12	....	....
10	67	79	75	13	27	35	79	52	7	....	....	....	....	....	....	....	52	....	23	2	5
11	165	173	146	133	154	152	171	162	42	47	15	17	17	....	20	20	2	....	34	2	4
12	56	55	55	23	42	54	56	....	....	....	....	....	....	....	....	....	....	....	11	....	5
13	123	123	123	50	66	126	148	87	....	....	....	....	....	....	....	....	....	....	9	....	....
14	117	105	98	64	80	93	116	148	8	8	7	....	....	....	12	8	12	....	41	1	....
15	56	56	42	29	42	20	33	....	9	9	....	....	....	....	....	....	....	....	8	....	....
16	173	145	116	77	81	117	151	99	1	5	5	4	4	....	....	....	....	....	42	1	16
17	45	79	45	24	24	24	79	33	19	7	7	....	....	....	....	....	46	....	10	....	....
18	16	....	10	6	4	4	19	....	....	....	....	....	....	....	....	....	....	....	9	....	....
19	270	290	234	122	222	131	233	208	2	4	2	2	....	....	1	2	24	....	60	3	12
20	21	16	16	11	16	11	34	....	....	....	....	....	....	....	....	....	....	....	6	1	....
21	1,314	2,489	2,405	355	1,175	845	614	762	60	2	2	....	3,971	146	....	58	157	11	335	37	160
22	320	404	426	204	258	322	244	223	64	40	40	9	12	....	25	55	26	60	78	5	6
23	166	110	99	37	54	62	75	40	5	5	5	....	131	....	....	....	10	....	14	2	....
24	362	525	370	166	200	414	558	384	17	17	17	14	208	....	11	11	21	40	86	2	23
25	42	42	42	19	35	19	....	57	2	2	....	....	....	....	....	....	....	....	9	....	....
26	439	360	249	134	209	189	405	503	6	6	6	....	....	316	6	66	150	....	51	3	12
27	271	263	252	150	212	154	311	187	6	6	6	....	....	....	....	1	16	....	69	3	8
28	90	99	11	4	4	4	....	29	....	....	....	....	....	....	....	....	....	....	10	....	....
29	90	325	343	30	178	143	103	126	....	104	....	....	722	26	15	....	135	4	80	14	75
	7,384	10,026	8,632	3,192	5,362	5,506	6,965	6,684	476	365	233	64	7,059	977	449	250	1,007	376	1,648	117	501
	1,532	1,926	1,764	619	1,051	1,194	1,638	1,217	118	102	92	35	1,059	....	91	88	27	193	167	7	4
	5,852	8,100	6,868	2,573	4,311	4,312	5,327	5,467	358	263	141	29	6,000	977	358	162	980	183	1,481	110	497
1	375	375	166	85	166	166	375	375	....	....	....	....	....	....	....	....	....	....	40	3	....
2	242	242	161	72	161	355	355	....	....	....	....	....	....	....	....	....	....	36	10	....	....
3	192	350	192	145	145	350	350	350	....	....	....	....	....	....	....	....	....	....	18	1	....
4	271	271	271	171	171	171	171	171	....	407	....	....	....	....	....	....	....	....	30	3	....
5	1,352	1,352	1,352	546	708	906	1,732	1,732	108	62	62	30	....	....	62	108	....	....	117	8	36
6	810	810	540	404	404	404	810	810	50	50	50	20	30	....	50	25	....	....	30	....	....
7	798	798	798	168	331	331	798	798	168	....	....	....	....	....	....	....	....	....	45	7	....
8	113	113	68	48	48	48	....	....	....	....	....	....	....	....	....	....	....	....	9	....	....
9	240	2,500	3,639	901	2,718	2,976	4,127	4,127	394	100	90	394	3,572	....	47	348	348	348	292	25	54
10	603	145	353	219	748	....	....	....	....	....	....	....	....	....	....	....	....	....	28	....	....
11	223	206	120	189	243	40	25	180	....	....	....	....	....	....	....	....	....	....	15	3	....
12	229	229	138	87	87	229	229	229	....	229	....	....	....	....	....	....	....	....	9	1	....
13	237	384	237	101	149	384	384	384	....	....	....	....	....	....	....	....	....	61	25	1	....
14	2,203	4,117	2,203	1,068	2,203	5,544	....	5,544	293	293	293	133	293	12	293	293	....	....	308	....	10
15	821	821	267	193	292	801	801	40	....	....	....	....	111	....	....	....	....	....	21	1	....
16	96	96	96	41	41	96	96	96	....	....	....	....	....	....	....	....	....	....	10	....	....
	8,805	12,809	10,601	4,438	8,615	12,801	10,301	14,836	1,013	1,141	495	577	4,006	12	452	774	348	445	1,007	53	100

ROMAN CATHOLIC

II.—Table G.—Attendance, Pupils in the

Towns.	Number of pupils.	Boys.	Girls.	Average daily attendance.	Percentage of average to total attendance.	Reading. First Reader, Part I.	First Reader, Part II.	Second Reader.	Third Reader.	Fourth Reader.	Fifth Reader.	Art.	Geography.	Music.	Literature.
1 Alexandria	479	236	243	259	54	151	67	99	80	82	.....	479	479	.....	.....
2 Almonte	140	74	66	65	46	29	31	30	16	34	.....	80	80	140	.....
3 Amherstburg	287	116	171	229	80	48	47	64	48	33	47	.....	192	.....	192
4 Arnprior	383	209	174	251	65	114	58	56	114	41	.....	383	155	383	211
5 Barrie	144	77	67	101	70	35	19	21	29	40	.....	144	90	144	69
6 Berlin	496	278	218	382	77	90	59	112	120	115	.....	496	345	496	496
7 Brockville	369	178	191	270	73	79	41	86	83	80	.....	369	369	369	369
8 Cobourg	210	118	92	152	72	42	33	31	49	55	.....	210	135	210	135
9 Cornwall	947	448	499	626	66	311	187	171	166	112	.....	947	947	947	947
10 Dundas	128	74	54	89	69	28	32	24	20	24	.....	128	44	128	128
11 Fort Frances	36	21	15	28	78	12	6	10	6	2	.....	.....	18	10	.....
12 Fort William	230	115	115	146	63	68	22	47	59	34	.....	230	140	230	140
13 Galt	83	41	42	69	83	23	11	13	24	12	.....	20	75	83	60
14 Goderich	66	33	33	51	77	14	9	13	17	13	.....	66	43	66	66
15 Hawkesbury	953	495	458	782	82	368	257	158	113	57	.....	953	953	953	.....
16 Ingersoll	76	38	38	64	84	16	8	17	18	17	.....	76	52	76	52
17 Kenora	220	94	126	118	53	77	30	44	40	29	.....	128	70	22	38
18 Lindsay	373	149	224	275	74	75	30	74	80	68	46	373	283	373	258
19 Massey	138	65	73	54	39	87	20	14	11	6	.....	.....	31	.....	31
20 Mattawa	348	155	193	212	61	120	42	53	69	47	17	348	214	300	288
21 Newmarket	53	29	24	31	58	14	13	8	7	11	.....	53	39	53	53
22 North Bay	395	216	179	239	60	166	69	63	48	49	.....	395	229	.....	229
23 Oakville	41	21	20	25	61	10	3	10	6	12	.....	28	31	40	28
24 Orillia	197	114	83	165	84	21	29	49	44	54	.....	197	176	197	176
25 Oshawa	77	33	44	62	80	12	10	17	26	12	.....	77	77	77	77
26 Owen Sound	142	69	73	84	59	39	20	25	28	30	.....	142	142	142	58
27 Paris	62	27	35	44	71	14	7	14	10	17	.....	62	62	62	62
28 Parkhill	51	24	27	29	57	13	6	9	16	7	.....	51	38	51	51
29 Pembroke	468	259	209	312	67	115	70	98	88	97	.....	468	283	169	283
30 Perth	235	135	100	159	68	41	39	33	62	60	.....	235	194	235	.....
31 Picton	44	24	20	32	73	7	.....	12	6	19	.....	.....	44	.....	44
32 Port Arthur	240	123	117	163	68	54	36	50	52	48	.....	240	150	240	186
33 Prescott	160	81	79	118	74	35	14	34	32	45	.....	160	125	160	160
34 Preston	101	54	47	79	78	29	16	13	28	15	.....	101	72	101	101
35 Rainy River	57	28	29	33	58	14	12	9	12	10	.....	.....	22	.....	57
36 Renfrew	294	159	135	222	75	85	55	58	50	46	.....	294	294	294	209
37 St. Mary's	65	29	36	47	72	19	8	11	13	14	.....	65	47	65	65
38 Sandwich	193	95	98	118	61	75	45	41	23	9	.....	193	121	.....	121
39 Sarnia	275	119	156	188	68	82	25	56	55	57	.....	275	275	275	275
40 Sault Ste Marie	254	117	137	168	66	100	23	37	46	48	.....	254	154	154	154
41 Seaforth	83	45	38	55	66	14	12	12	15	30	.....	83	57	83	57
42 Steelton	323	180	143	160	49	155	49	51	26	42	.....	323	323	323	323
43 Sturgeon Falls	390	161	229	248	63	134	98	76	56	26	.....	158	390	30	26
44 Sudbury	318	161	157	228	72	102	62	54	47	44	9	318	216	318	216
45 Thorold	125	54	71	81	65	27	17	23	31	27	.....	81	81	125	81
46 Trenton	145	77	68	112	77	27	17	40	34	27	.....	145	118	145	101
47 Vankleek Hill	262	116	146	141	54	84	46	58	35	39	.....	262	262	262	262
48 Walkerton	181	85	96	143	79	28	21	49	43	40	.....	181	181	181	181
49 Walkerville	95	49	46	77	81	25	15	12	29	14	.....	95	70	95	70
50 Wallaceburg	128	63	65	85	66	54	12	26	17	19	.....	51	74	128	128
51 Waterloo	147	73	74	107	73	19	33	36	40	19	.....	95	95	147	147
52 Whitby	58	36	22	34	58	12	5	12	9	20	.....	.....	29	.....	47
Totals	11,765	5,870	5,895	8,012	68	3,413	1,896	2,233	2,196	1,908	119	10,512	9,186	9,082	7,508
Totals.															
1 Rural Schools	15,263	7,684	7,579	8,434	55	5,389	2,567	2,807	2,338	1,988	174	8,132	8,202	5,402	5,852
2 Cities	19,320	9,807	9,513	13,707	71	5,017	2,932	4,147	3,639	2,894	691	18,544	14,783	15,708	8,805
3 Towns	11,765	5,870	5,895	8,012	68	3,413	1,896	2,233	2,196	1,908	119	10,512	9,186	9,082	7,508
4 Incorp. Villages	2,976	1,411	1,565	1,877	63	912	504	566	537	366	91	2,313	2,034	1,366	1,532
5 Grand totals, 1905	49,324	24,772	24,552	32,030	64.94	14,731	7,899	9,753	8,710	7,156	1,075	39,501	34,205	31,558	23,697
6 " 1904	47,807	24,179	23,628	29,920	62.58	14,057	8,350	9,484	8,526	6,576	814	43,866	32,483	32,920	.....
7 Increases	1,517	593	924	2,110	2.36	674	.....	269	184	580	261	.....	1,722	.....	.....
8 Decreases	.....	.....	.....	.....	.....	.....	451	.....	.....	.....	.....	4,365	.....	1,362	.....
9 Percentages	.....	50.22	49.78	64.94	.....	29.87	16.01	19.77	17.66	14.51	2.18	80.08	69.35	63.98	48.04

SEPARATE SCHOOLS.—*Concluded.*

various branches of instruction, etc.—*Concluded.*

	Composition.	Grammar.	English History.	Canadian History.	Physiology and Hygiene.	Nature Study	Physical Culture.	Bookkeeping.	Algebra.	Geometry.	Latin.	French.	German.	Elementary Science.	Commercial Subjects.	Agriculture.	Manual Training.	Maps and prizes. Number of maps.	Maps and prizes. Number of schools giving prizes.	Number of trees planted on Arbor Day.
1	479	479	162	162	479	.....	317	....	....	....	....	....	....	....	....	....	....	12	....	....
2	80	80	34	50	34	.....	140	....	....	....	....	....	....	....	....	34	.....	13	1	....
3	239	128	80	128	33	240	143	47	42	42	....	12	.....	47	47	....	.....	18	3	....
4	211	155	42	155	42	383	383	....	....	....	....	....	....	....	....	....	....	12	....	....
5	69	69	40	69	40	144	144	....	....	....	....	....	....	....	....	....	....	8	1	....
6	496	345	115	235	235	496	496	....	....	....	....	....	....	....	....	....	58	51	....	....
7	369	163	163	163	369	369	369	....	....	....	....	....	....	....	....	....	369	12	....	....
8	210	104	55	104	55	210	210	....	....	....	....	....	....	....	....	....	....	8	....	....
9	947	278	112	278	636	947	947	....	....	....	....	347	.....	112	....	....	....	20	1	....
10	128	68	44	44	44	....	....	....	....	....	....	....	....	....	....	....	....	10	1	....
11	18	18	.....	8	8	8	36	....	....	....	....	....	....	....	....	....	....	5	1	....
12	140	93	93	93	210	210	93	....	....	....	....	....	....	....	....	....	....	5	1	....
13	60	36	12	36	36	60	....	....	....	....	....	....	....	....	....	....	....	6	1	....
14	66	30	30	30	30	66	....	....	....	....	....	....	....	....	....	....	....	10	1	....
15	585	585	20	231	57	124	953	57	..	..	....	953	.....	450	....	....	250	24	....	4
16	52	35	35	35	35	76	76	....	....	....	....	....	....	....	....	....	....	7	1	....
17	73	80	39	54	38	38	....	....	....	....	....	220	....	....	....	....	....	6	2	....
18	258	194	164	194	144	373	373	46	46	46	....	....	....	46	46	....	....	10	....	....
19	31	17	6	17	6	31	....	....	....	....	....	138	....	....	....	....	....	2	1	....
20	288	288	64	186	348	288	.....	17	17	17	3	100	....	17	17	....	....	20	....	....
21	39	39	18	18	18	53	....	....	....	....	....	....	....	....	....	18	.....	9	1	....
22	229	160	49	97	49	395	....	....	....	....	....	....	....	....	....	....	....	9	....	....
23	28	28	18	11	28	28	32	....	....	....	....	....	....	....	....	....	....	4	1	....
24	176	147	98	98	98	147	197	....	....	....	....	....	....	....	....	....	....	12	....	....
25	77	65	12	38	38	77	77	....	....	....	....	....	....	....	....	....	....	5	1	....
26	103	58	58	58	58	142	142	....	....	....	....	....	....	....	....	....	....	8	1	....
27	62	27	18	27	27	27	62	....	....	....	....	....	....	....	....	....	....	5	1	....
28	32	32	7	23	51	51	51	....	....	....	....	....	....	51	.....	....	....	10	1	....
29	283	185	97	185	185	256	468	....	....	....	....	70	....	....	....	....	....	27	....	....
30	194	194	122	122	194	.....	235	....	....	....	....	....	....	....	....	....	....	5	1	....
31	44	44	19	19	19	44	44	....	....	....	....	....	....	....	....	....	....	7	....	....
32	240	100	48	100	100	150	240	....	....	....	....	240	....	....	....	....	....	10	....	....
33	160	111	77	77	77	160	160	....	....	....	....	....	....	....	....	....	66	9	....	....
34	101	43	43	43	43	43	56	....	....	....	....	....	....	....	....	....	....	12	1	....
35	57	57	10	22	31	51	....	....	....	....	....	....	....	....	....	....	....	2	....	....
36	294	96	96	154	96	294	294	....	....	....	....	....	....	154	.....	96	.....	14	....	....
37	47	27	14	27	65	.....	65	....	....	....	....	....	....	....	....	....	....	6	....	....
38	121	121	32	32	121	32	....	....	....	....	....	193	....	....	....	....	....	17	....	....
39	275	57	257	257	257	....	....	....	....	....	....	....	....	....	....	....	....	22	2	....
40	154	154	94	94	48	....	....	....	....	....	....	....	....	....	....	....	....	7	....	....
41	69	45	45	45	30	83	83	....	....	....	....	....	....	....	....	....	....	10	....	....
42	323	323	68	68	323	323	3 3	....	....	....	....	....	....	....	....	....	....	4	....	....
43	82	158	26	72	26	.....	....	....	....	....	....	360	....	....	....	....	20	15	1	1
44	318	164	164	164	164	216	318	9	9	9	....	297	.....	9	9	53	.....	9	....	....
45	81	81	27	58	27	81	....	....	....	....	....	....	....	....	....	....	....	9	....	....
46	118	61	61	61	61	145	145	....	....	....	....	....	....	....	....	....	....	6	....	....
47	262	132	39	132	132	262	262	....	....	....	....	262	....	....	....	....	132	15	....	....
48	181	181	40	83	181	181	181	181	....	....	....	....	83	181	....	....	....	22	1	....
49	95	43	14	29	55	95	95	....	....	....	....	62	....	....	....	....	....	....	1	....
50	128	51	51	51	51	74	128	19	....	....	....	1	....	....	....	....	....	8	....	....
51	147	95	50	50	50	147	....	....	....	....	....	....	147	....	....	....	....	12	1	....
52	47	29	20	29	20	58	....	....	....	....	....	....	....	....	....	....	....	6	....	....
	9,366	6,293	3,102	4,616	5,602	7,678	8,338	376	114	114	3	3,255	230	1,067	119	201	895	575	29	6
1	8,100	6,868	2,573	4,311	4,312	5,327	5,467	358	263	141	29	6,000	977	358	162	980	183	1,481	110	497
2	12,809	10,601	4,438	8,615	12,801	10,301	14,836	1,013	1,141	495	577	4,006	12	452	774	348	445	1,007	53	100
3	9,366	6,293	3,102	4,616	5,602	7,678	8,338	376	114	114	3	3,255	230	1,067	119	201	895	575	29	6
4	1,926	1,764	619	1,051	1,194	1,638	1,217	118	102	92	35	1,059	.....	91	88	27	193	167	7	1
5	32 201	25,526	10,732	18,593	23,909	24,944	29,858	1,865	1,620	842	644	14,320	1,219	1,968	1,143	1,556	1,716	3,230	199	607
6	31,382	31,382	9,226	16,946	23,716	.....	31,479	1,065	717	716	....	....	....	....	....	2,130	.....	3,133	197	479
7	819	.....	1,506	1,647	193	.....	.....	800	903	126	....	....	....	....	....	....	....	97	2	128
8	.....	5,856	.....	.....	.....	.....	1,621	....	....	....	....	....	....	.....	....	574	....	....	....	....
9	65.28	51.75	21.76	37.69	48.47	50.57	60.53	3.78	3.28	1.71	1.31	29.03	2.47	3.99	2.32	3.15	3.48	.....	.....	....

COLLEGIATE INSTITUTES

I.—Table H.—

Collegiate Institutes.	Receipts.						Teachers' salaries.
	Legislative grants.	Municipal grants (county.)	Municipal grants (local.)	School fees.	Balances and other sources.	Total receipts.	
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1 Aylmer	837 31	1,714 77	1,650 00	1,024 50	568 19	5,794 77	4,090 00
2 Barrie	*1,131 63	1,530 81	2,500 00	1,777 90	3,510 87	10,451 21	5,963 46
3 Berlin	‡2 750 25	3,089 38	6,000 00	2,165 25	4,605 87	18,590 75	8,939 38
4 Brantford	*1,301 29	.....	7,900 00	2,820 90	887 61	12,909 80	9,323 30
5 Brockville	*1,236 47	1,450 00	7 200 00	959 75	1,361 12	12,207 34	8,052 45
6 Chatham	1,241 28	.....	9,990 00	1,951 41	2,553 65	15,736 34	10,055 00
7 Clinton	901 62	1,584 87	3,300 00	995 25	1,228 89	8,010 63	4,629 00
8 Cobourg	*†1,395 37	1,917 82	2,400 00	747 50	295 27	6,755 96	4,858 74
9 Collingwood	*986 46	936 46	3,100 00	1,893 69	232 87	7,149 48	5,068 50
10 Galt	*1,214 90	2,096 28	39,000 00	2,443 84	593 42	45,348 44	7,333 33
11 Goderich	*1,119 69	1,288 00	2,800 00	1,606 15	2,414 13	9,227 97	5,540 00
12 Guelph	*1,264 14	.....	7,641 33	1,311 00	18,346 00	28,562 47	7,470 00
13 Hamilton	*‡5,961 99	.....	24,656 43	5,795 50	16 00	36,429 92	20,108 11
14 Ingersoll	*†1,561 92	1,857 62	4,086 03	981 50	639 83	9,126 90	6,775 00
15 Kingston	†2,596 34	.....	6,650 00	5,333 60	3,316 42	17,896 36	13,083 93
16 Lindsay	*1,223 66	2,034 14	3,211 00	1,950 75	1,040 95	9,460 50	7,714 22
17 London	*†1,750 29	1,200 00	25,589 00	4,199 00	732 57	33,470 86	24,108 50
18 Morrisburg	*1,090 17	3,706 30	2,355 79	36 56	2,702 16	9,890 98	5,774 17
19 Napanee	*1,119 92	2,700 00	2,900 00	3 00	2,165 90	8,888 82	5,276 58
20 Niagara Falls	*1,201 14	1,004 87	6,000 00	.....	390 29	8,596 30	6,520 00
21 Orillia	*1,188 01	313 28	4,400 00	1,436 15	953 81	8,291 25	5,837 61
22 Ottawa	*1,293 78	.....	18,426 00	12,307 18	.....	32,026 00	21,502 50
23 Owen Sound	*1,260 37	2,916 76	4,500 00	2,520 85	2,830 32	14,028 30	10,010 00
24 Perth	952 75	1,480 38	3.694 41	360 50	751 16	7,239 20	4,910 00
25 Peterborough	*1,261 29	.....	9,000 00	2,447 75	721 52	13,430 56	8,786 50
26 Renfrew	†1,233 38	2,020 18	2,950 00	61 50	612 51	6,877 57	5,323 00
27 Ridgetown	*1,033 53	2,089 08	1,300 00	998 25	1,369 74	6,790 60	4,370 00
28 St. Catharines	*1,244 65	4,685 45	4,762 07	120 00	1,403 13	12,215 30	7,780 49
29 St. Mary's	896 59	992 65	2,800 00	1,311 50	144 17	6,144 91	4,597 36
30 St. Thomas	*1,350 07	1,951 14	8,206 18	2,267 00	141 00	13,915 39	10,874 96
31 Sarnia	*1,337 53	1,999 01	6,211 50	.....	436 31	9,984 35	7,116 60
32 Seaforth	*967 31	1,637 33	1,900 00	1,320 20	2,571 21	8,396 05	4,969 81
33 Stratford	†2,255 93	1,300 00	6,500 00	4,122 15	379 29	14,557 37	8,425 77
34 Strathroy	*966 97	1,653 79	2,500 00	1,024 00	181 96	6,326 72	5,140 00
35 Toronto (Harbord)	*1,397 27	.....	26,817 47	3,884 00	.....	32,098 74	23,400 00
36 Toronto (Jameson)	*1,359 19	.....	16,449 87	5,169 00	.....	22,978 06	17,888 00
37 Toronto (Jarvis)	*1,376 10	.....	19,825 66	4,513 00	.....	25,714 76	19,199 00
38 Toronto Junction	1,166 63	900 51	7,165 00	2,119 00	923 94	12,275 08	7,810 00
39 Vankleek Hill	*1,007 44	2,280 37	1,800 00	35 00	538 51	5,661 32	3,930 00
40 Whitby	849 68	1,470 78	2,000 00	378 55	188 94	4,887 95	3,846 33
41 Windsor	1,328 11	3,071 47	10,126 22	87 00	94 18	14,706 98	8,869 50
42 Woodstock	*1,188 76	1,756 77	4,295 40	2,003 75	680 60	9,925 28	7,550 00
Totals	58,781 18	60,630 27	334,559 36	86,483 38	62,524 31	602,978 50	372,821 10

* Grant ($50) for Cadet Corps included. † Grant for Technical Education included.

‡ Grant ($4,500) for Normal College included.

AND HIGH SCHOOLS.

Financial Statement.

	Expenditure.					Balances.	Charges per year for tuition.
	Buildings, sites, and all permanent improvements.	Repairs to school accommodations.	Library, scientific apparatus, maps, etc., typewriters, drawing models and equipment for physical education.	School books, stationery, prizes, incl. examinations, and other expenses.	Total expenditure.		
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
1	527 80	17 80	51 95	722 69	5,410 24	384 53	Res. F. I. $5; others $10.
2	2,368 48	.....	160 46	1,348 20	9,840 60	610 61	$10.
3	1,382 51	58 82	2,860 43	5,349 61	18,590 75	.....	$10.
4	.....	201 05	35 28	2,761 77	12,321 40	588 40	City and Co. $10; others $16.
5	.....	481 83	130 50	2,582 81	11,247 59	959 75	$5.
6	.....	1,199 80	391 27	4,015 59	15,661 66	74 68	City first year free, other years $6; others $10.
7	.....	.....	25 90	740 70	5,395 60	2,615 03	$6; $8; $10.
8	.....	65 84	69 53	1,034 70	6,028 81	727 15	Res. $12; Co. free; others $14.
9	.....	327 07	.....	1,168 16	6,563 73	585 75	Town F. I. free: others $10.
10	24,380 90	31 08	205 77	1,872 23	33,823 31	11,525 13	Co. $10; others $14.
11	.....	507 93	268 47	913 35	7,229 75	1,998 22	Lower School $6; Com. F. $8; Upper and Middle Schools $10.
12	18,238 00	58 64	121 05	1,950 48	27,838 17	724 30	City free; Co. and adjoining Co's $10; others $20.
13	292 84	277 11	.....	15,751 86	36,429 92	.....	Res. Jr. Lower School $2.50; others $10; non-res. $25.
14	88 30	175 64	90 00	1,605 55	8,734 49	392 41	$7.50.
15	2,197 89	424 71	217 53	1,972 30	17,896 36	.....	Res. $5 to $25; non-res. $20 to $25.
16	424 71	.....	171 13	1,150 44	9,460 50	.....	Res. & Co. $7.50 to $10; others $7.50 to $20.
17	2,329 25	.....	574 49	5,309 50	32,321 74	1,149,12	First year free; City and Co. $10; others $30.
18	410 00	34 24	35 00	788 33	7,041 74	2,849 24	Free.
19	.....	202 49	.....	1,769 92	7,248 99	1,639 83	Town and Co. free; others $10.
20	20 00	209 04	120 54	1,625 77	8,495 35	100 95	Free.
21	129 00	84 09	.....	1,636 31	7,687 01	604 24	Town $5; others $10.
22	849 38	731 26	1,142 97	7,537 90	31,764 01	262 95	Res. $20, $25; non-res. $45, $50.
23	426 02	525 68	195 00	2,544 11	13,700 81	327 49	Res. first year free, other years $8 to $12; Co. $10; non-res. $12 to $15.
24	.....	3 95	.....	1,211 20	6,125 15	1,114 05	Co. $6; non-res. $16.
25	1,100 00	.....	.....	3,544 06	13,430 56	.....	Res. first year $5, other years $10; non-res. $25.
26	20 67	28 24	272 24	1,233 42	6,877 57	.....	Res. free; non-res. $15.
27	.....	256 14	101 75	1,901 17	6,629 06	161 54	Town $6; Co. and non-res. $10.
28	65 86	.....	.....	4,368 98	12,215 30	.....	Res. and Co. free; others $16.
29	50 75	.....	43 11	971 91	5,663 13	481 78	Town first year free, other years $5; all others $10.
30	.....	.....	68 89	2,971 54	13,915 39	.....	H. S. D. first year free, other years $10; Co. $10; others $30.
31	.....	.....	751 16	1,933 32	9,801 08	183 27	Free.
32	138 00	448 55	83 48	878 23	6,518 07	1,877 98	$6; $8; $10.
33	403 20	243 83	359 58	4,574 28	14,006 66	550 71	$10.
34	.....	99 94	.....	1,086 78	6,326 72	.....	Town F. I free; others $10.
35	259 95	945 24	231 94	6,238 65	31,075 78	} 1,022 96	{ F. I $6; Form II $15; F. III $21; F. IV $27; $6 additional for non-res.
36	226 97	656 51	370 32	3,836 26	22,978 06		
37	420 47	1,204 91	989 94	3,900 44	25,714 76		
38	362 29	940 15	158 14	2,412 01	11,682 59	592 49	$10; $15.
39	453 31	162 70	34 42	922 47	5,502 90	158 42	Province free; others $10.
40	89 95	191 03	.....	727 31	4,854 62	33 33	Town $20; Co. $7.50; others $10.
41	.....	.....	131 42	5,407 99	14,408 91	298 07	H. S. D. and Co. free; others $30.
42	118 00	241 11	292 20	1,628 47	9,829 78	95 50	Res. and Co. $7.50; non-res. $10.
	57,774 47	11,036 42	10,755 86	115,900 77	568,288 62	34,689 88	9 free; 33 not free.

COLLEGIATE INSTITUTES AND

I.—Table H.—Financial

High Schools.	Receipts.						Teachers' salaries.
	Legislative grants.	Municipal grants (county).	Municipal grants (local).	School fees.	Balances and other sources.	Total receipts.	
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1 Alexandria	641 58	757 70	2,083 00	.....	1,932 53	5,414 81	2,640 00
2 Almonte	702 38	702 38	2,613 36	261 50	6 85	4,286 47	3,334 15
3 Arnprior	613 71	613 71	1,700 00	80 50	1,278 75	4,286 67	2,560 00
4 Arthur	*646 80	1,085 95	672 08	921 35	50 25	3,376 43	2,490 00
5 Athens	712 81	1,746 68	1,000 00	419 00	1,392 34	5,270 83	3,550 00
6 Aurora	620 82	700 00	750 00	639 00	616 84	3,326 66	2,175 00
7 Beamsville	469 20	530 00	720 00	.....	483 15	2,202 35	1,435 00
8 Belleville	†1,143 45	435 00	4,250 53	264 05	.....	6,093 03	4,670 89
9 Bowmanville	793 75	1,854 41	2,370 00	275 90	351 17	5,645 23	4,150 00
10 Bradford	592 74	728 14	600 00	831 00	393 79	3,145 67	2,062 00
11 Brampton	852 93	2,000 00	1,600 00	1,206 00	218 82	5,877 75	4,825 31
12 Brighton	468 85	965 72	1,000 00	7 00	443 16	2,884 73	1,750 00
13 Caledonia	572 02	1,735 64	1,000 00	101 00	482 67	3,891 33	2,324 82
14 Campbellford	686 36	686 36	2,410 57	392 00	332 91	4,508 20	3,326 57
15 Carleton Place	689 35	689 35	1,950 00	135 00	833 66	4,297 36	3,460 45
16 Cayuga	579 50	1,824 31	.....	.....	870 00	3,273 81	2,309 00
17 Chesley	463 57	722 58	1,700 00	720 50	75 54	3,682 19	2,520 33
18 Colborne	462 08	675 15	1,200 00	.....	1,794 68	4,131 91	1,725 00
19 Cornwall	866 72	3,190 98	11,620 48	.....	4,140 41	19,812 59	4,900 00
20 Deseronto	651 05	651 05	2,350 00	184 00	1,041 04	4,877 14	2,733 25
21 Dundas	*686 49	1,036 49	850 00	703 50	105 02	3,381 50	2,581 60
22 Dunnville	666 19	2,324 96	1,000 00	.....	1,503 87	5,495 02	3,560 77
23 Dutton	575 75	1,076 56	1,200 00	1,414 00	1,605 04	5,871 35	2,836 46
24 East Toronto	478 14	700 00	15,539 46	516 00	414 71	17,648 31	2,240 00
25 Elora	540 10	721 10	875 00	410 75	81 38	2,628 33	2,220 00
26 Essex	†951 04	2,191 79	1,500 00	23 25	281 06	4,947 14	3,477 22
27 Fergus	541 06	582 78	2,400 00	416 00	195 82	4,135 66	2,620 00
28 Forest	616 04	1,392 22	500 00	393 75	528 85	3,430 86	2,350 00
29 Fort William	1,032 66	.....	2,500 00	.....	775 79	4,308 45	2,858 38
30 Gananoque	713 02	963 02	3,065 40	89 50	42 00	4,872 94	3,602 18
31 Georgetown	619 24	619 24	1,283 51	1,051 75	447 16	3,970 90	3,108 42
32 Glencoe	592 96	673 04	1,000 00	650 00	1,876 81	4,792 81	2,227 97
33 Gravenhurst	972 88	.....	994 00	326 00	.....	2,292 88	1,540 00
34 Grimsby	433 92	559 50	440 00	.....	1,015 42	2,448 84	1,530 00
35 Hagersville	623 71	1,244 51	650 00	.....	951 97	3,470 19	2,297 03
36 Harriston	604 56	604 56	1,700 00	800 75	826 07	4,535 34	3,023 07
37 Hawkesbury	606 01	1,606 01	.....	.....	251 91	2,463 93	2,260 00
38 Iroquois	735 18	2,239 00	1,612 44	.....	1,415 82	6,002 44	3,465 00
39 Kemptville	772 92	744 34	2,800 00	1,700 88	435 68	6,453 82	3,901 79
40 Kenora	1,016 60	.....	3,550 00	.....	.....	4,566 60	2,900 00
41 Kincardine	762 30	1,204 60	330 00	1,307 50	1,530 38	5,134 78	3,768 40
42 Leamington	689 98	1,506 26	2,400 00	88 50	963 46	5,648 20	3,430 00
43 Listowel	635 27	800 00	1,400 00	1,141 69	237 93	4,214 89	2,975 00
44 Lucan	645 83	799 27	1,000 00	1,207 00	125 20	3,777 30	2,560 00
45 Madoc	575 43	1,065 35	700 00	552 00	656 88	3,549 66	2,382 34
46 Markham	727 70	1,707 00	500 00	1,697 00	760 97	5,392 67	3,570 00
47 Meaford	843 73	1,617 01	1,525 00	893 00	430 49	5,309 23	3,603 05
48 Midland	468 40	.....	3,350 00	319 00	8,635 40	12,772 80	2,360 00
49 Mitchell	617 28	800 00	1,500 00	776 49	211 26	3,905 03	2,550 38
50 Mount Forest	*761 04	761 04	1,400 00	688 50	834 91	4,445 49	3,097 36
51 Newburgh	555 57	1,855 00	640 00	.....	221 04	3,271 61	2,470 00
52 Newcastle	477 27	790 00	543 00	.....	475 70	2,285 97	1,316 66
53 Newmarket	*745 96	750 00	1,100 00	878 40	302 96	3,777 32	2,632 09
54 Niagara	420 37	490 00	550 00	.....	127 44	1,587 81	1,283 34
55 Niagara Falls South	526 53	658 16	600 00	.....	2,103 49	3,888 38	1,766 68
56 North Bay	1,131 60	.....	4,432 30	349 00	119 05	6,031 95	2,920 00
57 Norwood	578 97	919 41	568 33	656 00	977 51	3,700 22	2,250 00

*Grant ($50) for Cadet Corps included. †Grant for Technical Education included.

HIGH SCHOOLS.—*Continued.*

Statement.—*Continued.*

	Expenditure.					Balances.	Charges per year for tuition.
	Buildings, sites and all permanent improvements.	Repairs to school accommodations.	Library, scientific apparatus, maps, etc., typewriters, drawing models, and equipment for physical education.	School books, stationery, prizes, fuel, examinations, and other expenses.	Total expenditure.		
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
1	190 00	.....	62 83	1,726 66	4,619 49	795 32	Free.
2	.....	.....	7 39	935 74	4,277 28	9 19	Res. $1 ; Co. and non-res. $6.
3	112 00	.....	.....	593 39	3,265 39	1,021 28	Res. free ; non-res. $10.
4	9 50	.....	199 99	482 22	3,181 71	194 72	$10.
5	.....	51 12	.....	599 86	4,200 98	1,069 85	Res. free ; Co. $5 ; others $10.
6	228 73	.....	19 73	439 20	2,862 66	464 00	$10.
7	.....	.....	33 41	188 15	1,656 56	545 79	Free.
8	.....	.....	.....	1,422 14	6,093 03	.....	Res. free ; others $25.
9	.....	158 54	44 65	1,227 62	5,580 81	64 42	Form I. with Latin $4 ; Form II. $6 ; Forms III. and IV. $7.50 ; Co. free.
10	.....	142 04	47 97	465 06	2,717 07	428 60	Res. F. I. free ; others $10.
11	.....	18 99	60 38	709 08	5,613 76	263 99	$10.
12	.....	39 15	23 06	328 46	2,140 67	744 06	Free.
13	.....	132 64	33 53	739 44	3,230 43	660 90	Free ; other Cos. $4.50. [others $10.
14	432 66	.....	.....	748 97	4,508 20	.....	H.S.D. $6 ; Co. and adjoining Cos. free ;
15	.....	148 18	65 00	597 85	4,277 48	19 88	Res. free ; Lanark and Carleton Cos. $5 ;
16	89 00	16 53	39 68	352 62	2,806 83	466 98	Free. [others $10.
17	559 83	.....	119 53	389 73	3,589 42	92 77	$10.
18	25 95	21 05	48 53	500 75	2,321 28	1,810 63	Free.
19	6,937 45	.....	.....	1,750 28	13,587 73	6,224 86	Free.
20	306 62	384 80	.....	980 30	4,404 97	472 17	Res. free ; others $10.
21	.....	58 44	52 51	538 31	3,230 86	150 64	Res. F. I. free ; II. & III. $9.50 ; non-res. $10.
22	23 65	410 14	251 95	1,211 51	5,458 02	37 00	Free.
23	1,504 13	.....	116 96	353 67	4,811 22	1,060 13	$10.
24	3,500 00	.....	69 75	1,104 25	6,914 00	10,734 31	Res. $10 ; non-res. $20.
25	.....	40 06	37 94	323 62	2,621 62	6 71	Res. $5 ; non-res. and Co., $10.
26	.....	194 42	.....	372 68	4,044 32	902 82	Res. and Co. free ; others $10.
27	69 18	.....	61 84	494 69	3,245 71	889 95	Res. free ; others $10.
28	.....	.....	.....	726 26	3,076 26	354 60	Res $10 ; non-res. free.
29	1,000 00	25 34	71 55	231 20	4,186 47	121 98	Free.
30	66 00	38 65	367 63	798 48	4,872 94	.....	Res. free ; Co. and non-res. $5.
31	6 00	29 75	162 31	664 42	3,970 90	.....	Form I. $7 ; others $10.
32	164 00	124 74	.....	2,270 83	4,787 54	5 27	$10.
33	.....	.....	10 93	673 35	2,224 28	68 60	F. I. $5 ; other F.'s $10.
34	7 40	.....	.....	132 86	1,670 26	778 58	Free.
35	38 00	35 21	29 00	971 25	3,370 49	99 70	Free.
36	307 02	201 61	59 35	612 84	4,203 39	332 05	$10.
37	.....	.....	.....	160 00	2,420 00	43 93	Free.
38	20 40	448 27	118 84	876 93	4,929 44	1,073 00	Free.
39	663 18	120 85	252 17	263 08	5,201 07	1,252 75	Res. free ; Co. $5 ; others $25.
40	.....	105 00	410 98	1,150 62	4,566 60	.....	Free ; non-res. $10.
41	250 00	24 09	204 16	872 51	5,119 16	15 62	H.S.D. $8 ; Co. $10.
42	.....	394 96	38 60	1,375 54	5,239 10	409 10	Co. free ; outside Co. $10.
43	.....	.....	178 20	1,061 69	4,214 89	.....	Town, F. I. $7, without Latin or French
44	141 55	50 00	60 00	834 37	3,645 92	131 38	$10. [free ; all others $10.
45	62 97	34 71	197 86	411 56	3,089 44	460 22	Res. $7 ; non-res. $10.
46	.....	216 76	232 39	642 32	4,661 47	731 20	$10.
47	355 85	525 74	.....	650 63	5,135 27	173 96	Town, 1st yr. $5, other yrs. $8 ; others $10.
48	7,746 35	.....	1,337 30	1,224 81	12,668 46	104 34	H.S.D. $5 ; others $10.
49	468 36	247 56	21 93	461 69	3,749 92	155 11	Res. $6 ; non-res. $10.
50	.....	74 57	.....	1,218 04	4,389 97	55 52	$10 ; F. I. free to res.
51	60 00	44 95	92 36	265 59	2,932 90	338 71	Free.
52	62 29	4 50	20 36	301 14	1,704 95	581 02	Free.
53	.....	90 50	9 85	1,044 88	3,777 32	.....	$10.
54	93 00	13 75	14 57	158 85	1,563 51	24 30	Free.
55	.....	201 76	114 60	858 60	2,941 64	946 54	Free.
56	1,529 49	.....	503 32	1,079 14	6,031 95	.....	Lower and middle schools. $10; upper $35.
57	159 00	140 00	.....	979 95	3,528 95	171 27	$6.

COLLEGIATE INSTITUTES AND

I.—Table H.—Financial

High Schools.	Receipts.						Teachers' salaries.
	Legislative grants.	Municipal grants (county.)	Municipal grants (local.)	School fees.	Balances and other sources.	Total receipts.	
	$ c.	$ c.	$ c.	$ c.	c.	$ c.	$ c.
58 Oakville	571 43	628 62	2,200 00	490 00	396 85	4,286 90	3,267 30
59 Omemee	449 18	449 18	889 15	130 00	36 00	1,953 51	1,516 66
60 Orangeville	821 44	1,200 00	1,300 00	1,301 85	909 16	5,532 45	4,312 00
61 Oshawa	898 47	1,802 97	2,900 00	652 75	453 66	6,617 85	4,728 62
62 Paris	642 35	642 35	3,100 00	106 42	115 20	4,606 32	3,450 00
63 Parkhill	666 21	666 21	1,750 00	898 40	209 90	4,190 72	3,065 00
64 Pembroke	748 59	748 59	4,837 79	.....	26 82	6,361 79	3,645 10
65 Petrolea	741 39	1,952 01	2,600 00	126 00	3,734 84	9,154 24	4,116 01
66 Picton	874 65	2,574 63	3,200 00	.....	2,024 86	8,674 14	4,776 67
67 Plantagenet	.....	900 00	.....	.....	.....	900 00	555 00
68 Port Arthur	1,279 58	.....	3,600 00	.....	206 20	5,085 78	2,910 00
69 Port Dover	455 50	455 50	627 65	.....	289 36	1,828 01	1,440 00
70 Port Elgin	560 79	795 16	1,100 00	528 25	213 00	3,197 20	2,265 40
71 Port Hope	880 39	1,938 33	2,366 28	865 50	.....	6,050 50	4,727 56
72 Port Perry	631 00	871 00	2,028 26	375 75	257 97	4,163 98	3,230 00
73 Port Rowan	413 16	575 36	1,190 03	.....	.....	2,178 55	1,350 00
74 Prescott	627 61	406 73	2,025 00	119 00	79 72	3,258 06	2,386 64
75 Richmond Hill	550 85	880 09	300 00	807 50	184 46	2,722 90	1,909 57
76 Rockland	.....	.....	1,000 00	.....	6,000 00	7,000 00	600 00
77 Sault Ste. Marie	1,094 32	.....	3,995 00	925 00	5,130 25	11,144 57	3,225 00
78 Simcoe	787 66	2,089 15	2,207 73	16 00	44 79	5,145 33	4,055 00
79 Smith's Falls	730 48	.....	3,138 16	244 50	75 00	4,188 14	3,670 00
80 Smithville	457 39	685 00	925 00	.....	681 35	2,748 74	1,450 00
81 Stirling	522 15	836 76	649 35	350 00	498 27	2,856 53	1,963 90
82 Streetsville	443 62	1,150 00	300 00	227 00	1,215 67	3,336 29	1,730 00
83 Sydenham	588 33	2,100 00	.....	409 80	320 86	3,418 99	2,469 54
84 Thorold	506 70	632 73	1,900 00	.....	140 21	3,179 64	1,800 00
85 Tillsonburg	605 88	605 88	1,300 00	370 00	777 28	3,659 04	2,305 22
86 Toronto Technical	.....	.....	31,281 00	4,599 79	2,682 99	38,533 78	28,006 63
87 Trenton	682 19	555 79	3,458 88	39 00	1,508 38	6,244 24	3,106 88
88 Uxbridge	*705 91	891 13	1,000 00	693 25	134 07	3,424 36	2,755 00
89 Vienna	438 30	588 30	550 00	.....	563 14	2,139 74	1,243 93
90 Walkerton	755 03	1,111 95	1,900 00	761 75	526 74	5,055 47	3,980 00
91 Wardsville	435 29	435 29	275 00	219 10	366 61	1,731 29	1,189 83
92 Waterdown	509 69	909 69	450 00	367 50	.....	2,236 88	1,840 00
93 Waterford	610 70	1,290 95	800 00	.....	740 14	3,441 79	2,520 78
94 Watford	673 74	1,781 05	600 00	376 00	1,794 05	5,224 84	2,867 50
95 Welland	666 68	1,705 21	1,800 00	.....	1,714 42	5,886 31	3,100 00
96 Weston	540 19	700 00	700 00	569 00	473 05	2,982 24	2,266 65
97 Wiarton	577 44	652 19	1,700 00	346 00	2,459 00	5,734 63	2,549 43
98 Williamstown	638 02	818 05	3,582 04	.....	1,447 70	6,485 81	2,896 50
1 Totals, High Schools	62,857 67	94,323 18	207,064 78	42,403 12	86,638 98	493,287 73	293,726 28
2 Totals, Collegiate Institutes	58,781 18	60,630 27	334,559 36	86,483 38	62,524 31	602,978 50	372,821 10
3 Grand totals, 1905	121,638 85	154,953 45	541,624 14	128,886 50	149,163 29	1,096,266 23	666,547 38
4 " 1904	120,799 49	148,271 37	447,734 04	116,758 04	127,304 71	960,867 65	620,710 27
5 Increases	839 36	6,682 08	93,890 10	12,128 46	21,858 58	135,398 58	15,837 11
6 Decreases	.....	.....	.....	.....	.....	.....	.....
7 Percentages	11.1	14.13	49.40	11.76	13.61	.....	66.36

* Grant ($50.00) for Cadet corps included. Cost per pupil, enrolled attendance, $35.05.

HIGH SCHOOLS—*Continued.*

Statement.—*Concluded.*

	Expenditure.						
	Buildings, sites and all permanent improvements.	Repairs to school accommodations.	Library, scientific apparatus, maps, etc., typewriters, drawing models and equipment for physical education.	School books, stationery, prizes, fuel, examinations and other expenses.	Total expenditure.	Balances.	Charges per year for tuition.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
58	164 25	128 00	42 57	684 78	4,286 90	.....	$5; $8.
59	33 00	.....	65 56	327 10	1,942 32	11 19	H. S. D. free; others $10.
60	223 10	.....	166 32	734 62	5,436 04	96 41	Town $9; others $10.
61	.....	96 53	136 83	934 39	5,896 37	721 48	Form I free; others $7.50.
62	217 00	137 38	98 14	703 80	4,606 32	....	Res. and Co. free; others $20.
63	.....	46 29	85 00	498 56	3,094 85	495 87	$6; $8; $10.
64	1,640 77	3 95	160 59	911 38	6,361 79	.....	Free.
65	389 26	.....	117 03	652 02	5,274 32	3,879 92	Free.
66	165 20	90 94	198 75	964 44	6,196 00	2,478 14	Free.
67	59 16	13 32	97 56	97 75	822 79	77 21	Free.
68	880 23	63 45	180 00	564 09	4,597 77	488 01	Free.
69	101 68	.....	39 93	246 40	1,828 01	.....	Free.
70	.....	.....	.....	484 75	2,750 15	447 05	Village $6.50; Co. $10.
71	.....	.....	317 28	1,005 66	6,050 50	.....	Co. free; town and others $9.
72	462 70	.....	6 85	449 25	4,148 80	15 18	F. I free; others $7.50.
73	209 80	286 88	30 00	301 87	2,178 55	.....	Free.
74	.....	49 70	33 87	738 83	3,209 04	49 02	Res. free; non-res. $5.
75	104 85	.....	1 00	512 59	2,528 01	194 89	$10.
76	5,966 00	.....	150 00	284 00	7,000 00	.....	Free.
77	3,641 87	.....	63 33	674 82	9,605 02	1,539 55	$10.
78	.....	118 49	249 09	722 75	5,145 33	.....	H.S.D. and Co. free; others $10.
79	.....	18 20	82 74	417 20	4,188 14	.....	Res. free; Co. $5; others $10.
80	46 00	192 29	63 06	258 48	2,009 83	738 91	Free.
81	145 20	12 20	8 50	492 65	2,622 45	234 08	$10.
82	.....	32 54	210 88	240 45	2,213 87	1,122 42	$5.
83	222 00	126 74	47 60	349 94	3,215 82	203 17	Res. $5; non-res. $6.
84	92 45	40 01	118 07	483 11	2,533 64	646 00	Free.
85	377 65	31 93	10 43	767 78	3,493 01	166 03	H.S.D. 1st year free; others $6.
86	26 50	777 38	2,955 12	6,798 15	38,563 78	.....	1st year free; 2nd year $9; 3rd yr. $15; special students $2 per subject.
87	811 50	694 43	120 00	917 30	5,650 11	594 13	Town free; Co. and adjoining Cos. 65 % of cost of maintenance; others $10.
88	.....	63 90	18 82	526 94	3,364 66	59 70	Res. $5; Co. and others $7.50.
89	86 35	.....	130 00	168 25	1,628 53	511 21	Free.
90	.....	.....	131 65	576 76	4,688 41	367 06	$10.
91	.....	29 31	7 59	498 58	1,725 31	5 98	Res. $7.50; others $10.
92	20 00	79 20	15 70	234 86	2,189 76	47 12	$5.
93	.....	13 01	28 42	602 59	3,164 80	276 99	Free.
94	.....	.....	.....	902 70	3,770 20	1,454 64	Res. and non-res. $10; Co. free.
95	304 60	135 25	23 83	683 04	4,246 72	1,639 59	Free.
96	95 23	33 03	37 77	393 59	2,826 27	155 97	$10.
97	64 70	143 32	100 36	2,876 80	5,734 61	02	$5.
98	.....	45 25	.....	2,742 61	5,684 36	801 45	Free.
1	45,740 61	8,512 29	12,255 13	75,975 31	436,209 62	57,078 11	48 free; 50 not free.
2	57,774 47	11,036 42	10,755 86	115,900 77	568,288 62	34,689 88	9 free; 33 not free.
3	103,515 08	19,548 71	23,010 99	191,876 08	1,004,498 24	91,767 99	57 free; 83 not free.
4	50,512 10	22,481 91	15,128 93	168,254 24	877,087 45	83,780 20	56 free; 82 not free.
5	53,002 98	.....	7,882 06	23,621 84	127,410 79	7,987 79	1 free; 1 not free.
6	.....	2,933 20	....	.....	....	.....	
7	10.30	1.95	2.29	19.10	.....	.....	40.71 % free; 59.29 % not free.

average attendance, $57.18.

COLLEGIATE INSTITUTES AND

II.—Table I.—Attendance, Pupils in the Schools

Collegiate Institutes.	Pupils.				Number of pupils in—			Number of pupils from—			Occupation of			
	Boys.	Girls.	Total.	Average attendance.	Lower School.	Middle School.	Upper School.	Municipalities composing the High School District.	Municipalities within the County.	Other Counties.	Commerce.	Agriculture.	Professions.	Mechanical occupations.
1 Aylmer	85	84	169	104	82	63	24	68	100	1	24	95	18	24
2 Barrie	124	130	254	154	131	102	21	154	96	4	73	87	26	40
3 Berlin	148	136	284	177	185	79	20	153	122	9	132	36	46	31
4 Brantford	183	197	380	237	235	106	39	275	97	8	128	99	34	87
5 Brockville	168	188	356	218	233	87	36	274	76	6	61	68	21	121
6 Chatham	215	250	465	305	305	138	22	326	138	1	143	129	67	91
7 Clinton	88	89	177	104	110	51	16	98	78	1	43	60	17	37
8 Cobourg	74	86	160	102	108	42	10	92	68	....	71	55	10	4
9 Collingwood	126	133	259	150	164	74	21	165	55	39	102	101	16	9
10 Galt	133	171	304	179	204	90	10	181	100	23	67	64	14	133
11 Goderich	101	167	268	164	116	120	32	165	101	2	35	110	30	85
12 Guelph	131	183	314	190	211	69	34	247	56	11	124	66	43	53
13 Hamilton	388	495	883	537	507	253	123	719	103	65	320	109	95	261
14 Ingersoll	94	109	203	119	152	29	22	99	70	34	50	88	16	43
15 Kingston	268	343	611	377	355	229	27	514	87	10	215	83	90	136
16 Lindsay	158	178	336	200	176	127	33	208	99	29	102	106	32	48
17 London	521	513	1,034	617	677	254	103	831	186	17	362	157	92	342
18 Morrisburg	117	117	234	150	85	110	39	91	138	5	24	113	13	44
19 Napanee	122	157	279	176	160	90	29	144	129	6	58	116	36	40
20 Niagara Falls	130	185	315	183	231	57	27	242	53	20	79	62	33	56
21 Orillia	131	174	305	182	185	96	24	159	87	59	103	77	39	55
22 Ottawa	411	346	757	479	585	135	37	662	63	32	195	37	117	310
23 Owen Sound	219	246	465	293	254	147	64	271	141	53	124	159	36	81
24 Perth	96	119	215	134	165	32	18	130	81	4	43	74	22	52
25 Peterborough	179	187	366	246	284	56	26	310	50	6	80	48	64	96
26 Renfrew	122	166	288	159	188	86	14	131	144	13	74	105	13	59
27 Ridgetown	102	110	212	114	138	60	14	82	124	6	42	86	8	22
28 St. Catharines	144	199	343	184	247	73	23	221	109	13	98	43	22	42
29 St. Mary's	106	171	277	180	131	115	31	134	66	77	58	120	27	44
30 St. Thomas	202	259	461	298	341	100	20	342	119	....	103	119	17	133
31 Sarnia	145	180	325	215	248	54	23	240	76	9	106	50	36	102
32 Seaforth	113	117	230	139	125	74	31	96	116	18	31	136	9	32
33 Stratford	166	197	363	233	226	104	33	267	79	17	115	85	35	111
34 Strathroy	79	100	179	113	122	51	6	99	77	3	42	77	21	19
35 Toronto (Harbord)	306	387	693	432	469	171	53	688	5	....	292	2	116	198
36 " (Jameson)	194	251	445	284	327	85	33	432	10	3	160	2	25	140
37 " (Jarvis)	311	294	605	362	417	143	45	563	28	14	313	13	99	140
38 Toronto Junction	162	158	320	193	206	90	24	205	35	80	105	56	32	77
39 Vankleek Hill	77	129	206	131	139	52	15	68	118	20	17	130	10	32
40 Whitby	70	93	163	97	96	51	16	93	69	1	28	69	20	31
41 Windsor	135	218	353	227	280	51	22	278	72	3	123	42	27	131
42 Woodstock	153	195	348	211	251	63	34	213	125	10	131	91	29	46
Totals	6,997	8,207	15,204	9,349	9,851	4,059	1,294	10,721	3,751	732	4,596	3,425	1,573	3,638

HIGH SCHOOLS.—*Continued.*

and in the Various Subjects, etc.—

	Parents.		Number of Pupils in the various subjects.												
	Laboring occupations.	Other callings.	English Grammar.	English Composition and Rhetoric.	English Literature.	Canadian History.	British History.	Ancient History.	Mediæval History.	Modern History.	Geography.	Reading.	Arithmetic and Mensuration.	Algebra.
1	8	.....	152	169	169	145	152	83	.....	.....	145	140	153	162
2	15	13	234	254	254	247	254	168	.....	.....	186	167	219	226
3	38	1	280	280	280	265	130	60	.....	.....	209	229	272	260
4	18	14	335	367	367	209	228	128	.....	.....	265	272	335	365
5	73	12	326	350	350	298	316	101	.....	.....	298	316	316	298
6	27	8	305	465	465	320	342	138	.....	.....	342	443	305	342
7	14	6	157	173	174	146	146	92	.....	11	159	88	160	173
8	20	.....	150	160	160	150	150	52	.....	.....	108	108	150	160
9	31	.....	243	256	256	221	228	78	.....	.....	194	179	236	211
10	11	15	294	304	304	166	134	122	.....	.....	164	247	294	225
11	5	3	236	252	252	236	236	142	.....	.....	102	110	252	201
12	17	11	280	314	314	280	234	103	.....	.....	211	211	280	230
13	7	91	748	845	847	760	868	363	.....	.....	539	507	756	838
14	2	4	191	200	200	191	200	49	.....	.....	191	152	191	183
15	41	46	512	608	608	324	350	153	.....	.....	456	512	548	507
16	16	32	336	336	336	226	330	160	.....	.....	226	226	323	256
17	34	47	931	990	990	677	990	313	.....	.....	677	677	931	813
18	17	23	204	234	230	204	193	149	.....	.....	204	234	204	230
19	14	15	210	270	271	195	171	104	.....	.....	183	190	240	240
20	61	24	288	312	312	288	288	84	.....	.....	208	231	288	312
21	4	27	196	289	289	203	157	109	.....	9	240	180	207	250
22	22	76	723	757	753	601	470	110	.....	.....	529	580	718	755
23	33	32	401	465	465	359	424	197	.....	.....	364	213	401	400
24	6	18	206	215	215	206	210	41	.....	.....	206	150	205	213
25	58	20	310	360	360	306	306	78	.....	306	340	280	340	399
26	22	15	188	288	288	138	152	100	.....	.....	188	188	188	238
27	14	40	202	212	212	202	212	74	.....	.....	202	138	202	144
28	40	98	320	343	343	320	270	86	.....	.....	320	270	320	340
29	21	7	131	269	269	253	261	139	.....	.....	168	131	131	269
30	65	24	441	461	461	278	175	120	.....	.....	283	286	441	337
31	20	11	309	318	318	257	263	67	.....	.....	267	230	309	287
32	16	6	166	220	218	196	162	95	.....	.....	112	125	199	208
33	3	14	363	343	360	360	360	97	.....	.....	200	243	330	335
34	13	7	176	179	178	170	175	70	.....	.....	170	122	176	170
35	.....	85	672	693	693	428	425	147	.....	.....	590	576	672	693
36	88	30	425	440	440	364	442	112	.....	.....	367	365	397	432
37	.....	40	541	588	588	223	555	184	.....	.....	347	464	532	592
38	21	29	296	312	312	296	313	74	.....	.....	247	247	305	256
39	13	4	202	206	206	136	117	67	.....	.....	176	123	199	180
40	14	1	155	161	161	155	161	40	.....	.....	110	96	147	161
41	15	15	279	350	222	171	187	65	.....	.....	167	225	314	217
42	14	37	314	348	340	314	340	97	.....	.....	286	251	314	205
	971	1,001	13,428	14,956	14,830	11,487	12,077	4,811	.....	326	10,946	10,702	13,500	13,313

COLLEGIATE INSTITUTES AND

II.—TABLE I.—Attendance, Pupils in the Schools

Collegiate Institutes.	Number of Pupils in the									
	Geometry.	Trigonometry.	French.	German.	Latin.	Greek.	Zoology.	Botany.	Chemistry.	Physics.
1 Aylmer	162	20	110	2	149	.....	4	5	87	137
2 Barrie	175	18	167	30	186	5	166	166	177	231
3 Berlin	189	17	57	166	107	2	107	107	97	173
4 Brantford	358	26	318	81	242	9	181	181	152	259
5 Brockville	189	20	230	72	269	7	108	108	95	260
6 Chatham	335	22	235	37	281	42	188	188	107	320
7 Clinton	173	16	72	12	142	10	71	71	42	162
8 Cobourg	162	10	99	12	112	.....	54	54	98	98
9 Collingwood	211	14	115	16	176	.....	9	171	81	120
10 Galt	164	9	176	49	166	4	.....	170	94	201
11 Goderich	200	21	115	55	118	9	65	65	162	166
12 Guelph	230	34	197	61	205	6	82	82	65	210
13 Hamilton	838	91	562	208	770	13	43	548	257	691
14 Ingersoll	140	20	141	2	117	.....	68	68	59	146
15 Kingston	499	19	444	109	407	17	26	56	103	238
16 Lindsay	211	26	166	22	189	10	9	100	96	186
17 London	670	59	772	64	548	21	26	603	268	827
18 Morrisburg	230	39	165	24	191	12	110	109	149	214
19 Napanee	137	22	193	39	205	4	124	124	96	251
20 Niagara Falls	106	24	168	14	185	.....	165	165	75	242
21 Orillia	198	25	126	28	209	7	166	166	149	239
22 Ottawa	421	57	709	103	605	18	422	438	140	572
23 Owen Sound	400	54	270	17	316	15	12	234	390	441
24 Perth	167	15	141	21	156	13	129	107	39	211
25 Peterborough	266	16	170	32	170	1	200	200	75	270
26 Renfrew	238	14	150	21	149	3	.....	50	54	148
27 Ridgetown	141	14	54	8	138	2	7	7	68	74
28 St. Catharines	231	19	157	54	172	16	78	74	90	126
29 St. Mary's	264	23	189	41	250	8	135	135	240	276
30 St. Thomas	235	20	103	26	205	3	217	217	103	461
31 Sarnia	170	16	152	28	191	13	114	114	56	222
32 Seaforth	159	21	149	32	198	6	7	7	87	99
33 Stratford	233	33	104	159	264	4	219	219	319	337
34 Strathroy	130	6	110	16	155	4	3	3	20	160
35 Toronto (Harbord)	693	61	680	288	648	57	404	404	157	492
36 Toronto (Jameson)	424	18	428	232	402	34	12	14	85	92
37 Toronto (Jarvis)	588	85	581	160	517	38	331	346	133	525
38 Toronto Junction	166	14	144	45	209	18	112	112	89	221
39 Vankleek Hill	146	12	125	7	149	2	106	106	54	99
40 Whitby	161	12	73	15	123	.....	1	110	150	150
41 Windsor	141	20	179	34	174	2	185	185	54	261
42 Woodstock	205	21	202	39	211	10	150	151	98	230
Totals	11,159	1,107	9,498	2,481	10,376	445	4,616	6,540	5,010	10,838

HIGH SCHOOLS. —*Continued.*

and in the various Subjects, etc.—*Continued.*

various Subjects.—*Continued.*

	Mineralogy.	Writing.	Bookkeeping.	Stenography.	Typewriting.	Art.	Physical Education.	Special Courses.				
								Commercial.	Manual Training.	Household Science.	Arithmetic and Grammar.	Art.
1	.....	82	82	.....	.....	82	145	.....	.....	.....	26	.....
2	.....	106	123	71	23	107	252	.....	.....	.....	.....	.....
3	.....	162	154	84	30	154	213	86	113	142	20	.....
4	.....	192	160	76	68	185	235	76	112	80	68	18
5	.....	196	196	45	48	176	.....	48	.....	.....	45	.....
6	.....	253	253	123	123	182	443	123	.....	.....	138	.....
7	.....	46	88	55	50	82	161	4	.....	.....	44	.....
8	.....	108	108	108	45	75	160	45	30	.....	26	.....
9	.....	132	132	56	36	179	241	25	.....	.....	55	.....
10	.....	183	125	80	86	119	284	78	.....	.....	45	.....
11	.....	115	111	68	41	97	232	40	.....	.....	114	.....
12	.....	130	130	80	80	50	280	80	.....	32	69	.....
13	.....	760	175	50	15	279	750	20	328	382	100	.....
14	.....	90	18	22	15	48	200	10	63	75	39	.....
15	.....	114	172	88	92	72	.....	85	175	.....	47	52
16	.....	176	176	49	49	176	326	49	.....	.....	41	.....
17	.....	677	544	167	58	454	758	167	165	340	138	.....
18	.....	85	90	33	30	111	190	22	.....	.....	114	.....
19	8	118	160	80	40	190	222	2	.....	.....	39	.....
20	.....	100	175	129	49	191	231	125	.....	.....	23	.....
21	.....	150	150	42	50	180	270	.....	.....	.....	76	.....
22	.....	458	252	62	82	417	735	64	.....	.....	40	.....
23	.....	230	221	36	34	230	274	42	.....	.....	137	.....
24	.....	45	109	.....	.....	151	212	.....	.....	.....	.....	.....
25	.....	263	255	91	30	.....	350	102	.....	.....	30	.....
26	.....	96	92	47	48	66	288	50	43	25	86	.....
27	.....	77	77	45	45	90	202	66	.....	.....	57	.....
28	.....	183	183	112	57	18	330	112	.....	.....	37	.....
29	.....	67	128	50	6	167	254	51	.....	.....	110	.....
30	.....	226	226	124	90	177	461	71	.....	.....	100	.....
31	.....	156	136	106	67	116	292	67	.....	.....	36	.....
32	.....	125	64	14	29	64	200	18	.....	.....	58	.....
33	.....	226	142	90	75	66	.....	.....	92	116	30	.....
34	.....	78	85	28	35	140	170	8	.....	.....	53	.....
35	.....	428	19	.....	.....	429	439	.....	.....	.....	17	.....
36	.....	365	354	.....	.....	365	417	.....	.....	.....	18	.....
37	.....	237	226	.....	.....	337	560	.....	.....	.....	.....	.....
38	.....	173	109	61	61	148	.....	61	.....	.....	29	.....
39	.....	78	92	22	28	106	188	22	.....	.....	52	.....
40	.....	92	100	25	.....	105	163	.....	.....	.....	15	.....
41	.....	135	150	136	72	241	261	131	.....	.....	30	44
42	.....	130	144	72	50	120	296	34	113	.....	12	10
	8	7,843	6,476	2,627	1,837	6,742	11,685	1,984	1,234	1,192	2,214	124

COLLEGIATE INSTITUTES

II.—Table I.—Attendance, Pupils in the Schools

High Schools.	Pupils.				Number of Pupils in			Number of Pupils from		
	Boys.	Girls.	Total.	Average Attendance.	Lower School.	Middle School.	Upper School.	Municipalities composing the High School District.	Municipalities within the County.	Other Counties.
1 Alexandria	65	82	147	89	116	31	.....	127	12	8
2 Almonte	58	78	136	85	70	59	7	93	32	11
3 Arnprior	57	86	143	83	96	40	7	123	3	17
4 Arthur	62	78	140	92	89	41	10	64	75	1
5 Athens	83	122	205	130	109	86	10	82	119	4
6 Aurora	44	65	109	62	69	33	7	50	57	2
7 Beamsville	27	30	57	32	35	22	.....	26	31	.....
8 Belleville	121	148	269	152	192	62	15	221	46	2
9 Bowmanville	59	85	144	90	72	57	15	76	62	6
10 Bradford	75	73	148	90	91	57	.....	57	87	4
11 Brampton	95	77	172	118	98	48	26	81	87	4
12 Brighton	29	44	73	40	50	23	.....	31	42	.....
13 Caledonia	50	81	131	80	79	43	9	43	66	22
14 Campbellford	79	93	172	100	130	34	8	105	59	8
15 Carleton Place	69	90	159	105	82	65	12	121	25	13
16 Cayuga	39	44	83	51	50	27	6	27	56	.....
17 Chesley	53	56	109	70	58	42	9	72	24	13
18 Colborne	36	35	71	44	28	43	.....	37	34	.....
19 Cornwall	143	168	311	197	214	70	27	154	133	24
20 Deseronto	34	67	101	69	60	30	11	72	17	12
21 Dundas	78	66	144	91	96	48	.....	86	58	.....
22 Dunnville	65	86	151	90	105	38	8	95	47	9
23 Dutton	74	131	205	131	84	84	37	64	128	13
24 East Toronto	58	40	98	54	75	19	4	65	31	2
25 Elora	26	51	77	49	36	27	14	42	35	.....
26 Essex	43	77	120	86	61	37	22	52	67	1
27 Fergus	70	72	142	82	80	42	20	74	66	2
28 Forest	59	69	128	76	68	48	12	63	65	.....
29 Fort William	41	47	88	46	71	15	2	85	2	1
30 Gananoque	54	86	140	94	95	39	6	106	24	10
31 Georgetown	68	85	153	94	110	35	8	52	64	37
32 Glencoe	57	51	108	66	53	44	11	34	71	3
33 Gravenhurst	33	43	76	44	47	27	2	75	1	.....
34 Grimsby	37	43	80	46	60	20	.....	35	21	24
35 Hagersville	63	60	123	80	83	34	6	58	65	.....
36 Harriston	62	58	120	80	51	52	17	60	24	36
37 Hawkesbury	26	32	58	37	42	10	6	34	23	1
38 Iroquois	70	89	159	103	107	40	12	63	75	21
39 Kemptville	95	124	219	145	106	87	26	63	78	78
40 Kenora	40	43	83	50	68	14	1	80	3	.....
41 Kincardine	97	105	202	132	119	69	14	101	99	2
42 Leamington	61	89	150	91	87	55	8	66	71	13
43 Listowel	87	78	165	106	91	50	24	146	.....	19
44 Lucan	85	76	161	110	91	49	21	61	98	2
45 Madoc	37	41	78	54	38	35	5	39	39	.....
46 Markham	135	110	245	144	143	68	34	25	198	22
47 Meaford	65	96	161	103	78	67	16	63	82	16
48 Midland	38	48	86	50	56	25	5	66	19	1
49 Mitchell	66	54	120	77	65	55	.....	64	54	2
50 Mount Forest	59	75	134	88	77	50	7	83	16	35
51 Newburgh	82	68	150	104	78	72	.....	45	101	4
52 Newcastle	26	41	67	38	42	25	.....	24	43	.....
53 Newmarket	67	68	135	79	92	43	.....	74	57	4
54 Niagara	18	32	50	24	40	10	.....	36	14	.....
55 Niagara Falls South	33	43	76	34	54	22	.....	42	34	.....
56 North Bay	44	61	105	65	78	21	6	101	4	.....
57 Norwood	88	80	168	105	110	58	.....	65	79	24

AND HIGH SCHOOLS.—*Continued.*

and in the various subjects, etc.—*Continued.*

	Occupation of Parents.						Number of Pupils in the various subjects.											
	Commerce.	Agriculture.	Professions.	Mechanical occupations.	Laboring occupations.	Other callings.	English Grammar.	English Composition and Rhetoric.	English Literature.	Canadian History.	British History.	Ancient History.	Mediæval History.	Modern History.	Geography.	Reading.	Arithmetic and Mensuration.
1	15	99	2	18	13	.....	147	147	147	147	147	31	.....	.....	147	147	147
2	23	51	9	42	5	6	130	128	128	128	133	39	.....	.....	118	103	130
3	43	30	5	37	22	6	136	140	140	29	140	44	.....	.....	136	96	136
4	30	76	1	14	7	12	130	140	140	130	140	51	.....	.....	130	100	82
5	30	128	12	20	13	2	195	203	204	195	203	94	.....	.....	190	107	195
6	21	44	8	21	9	6	10	102	109	109	109	40	.....	.....	109	109	102
7	9	24	6	11	5	2	57	57	57	57	57	22	.....	.....	51	40	57
8	98	36	38	88	8	1	254	269	269	192	269	77	.....	.....	192	269	254
9	14	70	12	17	23	8	135	140	140	129	140	57	11	11	122	100	135
10	28	86	11	12	11	.....	148	148	148	130	148	52	.....	.....	135	91	148
11	28	42	22	35	33	12	142	172	170	142	170	54	.....	.....	156	102	156
12	9	40	5	7	12	.....	73	73	73	50	73	23	.....	.....	50	50	73
13	14	87	7	10	9	4	79	128	128	122	128	52	.....	.....	128	79	79
14	44	72	10	20	16	10	164	172	172	164	172	52	.....	.....	164	120	164
15	44	33	25	44	12	1	82	157	157	147	100	23	.....	.....	100	100	82
16	14	45	4	16	3	1	78	82	82	78	82	32	.....	.....	73	60	78
17	32	36	13	20	6	2	100	108	108	99	107	50	.....	.....	92	58	98
18	8	35	6	5	7	10	71	71	71	54	54	35	.....	.....	54	36	71
19	76	90	35	60	38	12	300	307	307	214	191	93	.....	.....	230	307	300
20	21	31	8	25	11	5	72	101	101	72	101	41	.....	.....	90	72	72
21	32	31	10	48	7	16	144	144	144	144	144	48	48	144	132	96	144
22	46	44	12	33	12	4	143	151	151	104	151	39	.....	.....	107	105	144
23	12	107	20	21	32	13	168	205	205	168	205	121	.....	.....	168	84	168
24	25	9	13	37	3	11	98	98	98	98	98	23	.....	.....	75	75	98
25	21	24	3	11	14	4	70	77	74	57	76	37	.....	.....	70	46	70
26	32	63	14	6	4	1	97	119	119	97	115	90	.....	.....	97	60	97
27	27	61	17	8	9	20	120	136	136	122	122	58	.....	.....	129	80	120
28	20	57	11	9	16	15	119	126	126	119	85	58	.....	.....	95	85	72
29	54	2	6	14	5	7	88	88	88	88	88	17	.....	.....	88	71	88
30	28	33	20	59	.....	.....	138	140	140	95	140	45	.....	.....	95	95	138
31	36	69	15	25	6	2	145	149	149	145	145	38	.....	.....	145	110	145
32	19	56	11	14	8	.....	98	108	108	108	108	55	.....	.....	98	53	98
33	18	9	3	20	17	9	76	76	76	66	67	24	.....	.....	64	62	75
34	13	59	4	7	15	2	80	80	80	80	80	20	.....	...	80	60	80
35	12	57	12	26	14	2	123	123	123	118	123	47	.....	.....	118	97	118
36	29	42	16	17	1	15	103	116	116	103	117	57	.....	.....	100	51	103
37	25	16	7	7	3	.....	54	57	57	54	57	14	.....	.....	58	41	55
38	21	88	11	25	14	.....	125	158	158	149	157	48	.....	.....	149	107	126
39	58	62	20	54	21	4	215	219	219	196	211	102	.....	.....	171	93	193
40	17	1	13	26	5	21	82	83	83	82	82	13	.....	.....	69	68	82
41	45	101	14	27	13	2	119	198	198	188	198	79	.....	.....	188	119	119
42	19	48	22	34	11	16	130	140	140	135	140	55	.....	.....	127	85	130
43	55	60	20	19	1	10	138	160	160	138	160	69	.....	.....	137	91	140
44	20	85	10	20	15	11	144	161	161	144	120	39	.....	....	144	95	105
45	20	31	7	10	8	2	73	73	73	73	73	59	.....	.....	73	38	73
46	41	131	25	21	7	20	211	245	245	211	245	102	.....	.....	211	143	211
47	28	80	17	20	5	11	145	161	161	145	161	83	.....	.....	137	78	145
48	12	12	7	26	33	2	84	85	85	80	85	50	.....	.....	84	78	84
49	28	48	10	20	3	11	1 0	120	120	120	120	55	.....	.....	104	82	120
50	35	44	15	19	6	15	127	134	134	77	134	57	.....	.....	127	77	127
51	10	100	4	13	20	3	146	150	150	149	149	72	.....	.....	149	150	150
52	8	36	6	2	5	10	67	67	67	67	67	25	.....	.....	67	42	67
53	35	45	11	29	12	3	92	135	135	135	135	43	.....	.....	121	92	92
54	2	14	8	11	10	5	50	50	50	24	50	10	.....	.....	50	40	50
55	19	28	6	16	4	3	76	76	76	76	76	22	.....	.....	58	54	76
56	15	5	7	41	33	4	97	105	105	99	103	23	.....	.....	97	81	103
57	8	124	4	22	6	4	168	168	168	168	168	58	.....	168	168	110	168

COLLEGIATE INSTITUTES AND

II.—Table I.—Attendance, Pupils in the Schools

High Schools.	Number of pupils in the various									
	Algebra.	Geometry.	Trigonometry.	French.	German.	Latin.	Greek.	Zoology.	Botany.	Chemistry.
1 Alexandria	147	70	.....	139	.....	139	.....	129	129	31
2 Almonte	126	86	7	68	3	102	4	101	94	58
3 Arnprior	139	61	5	38	.....	121	5	95	95	28
4 Arthur	140	140	7	32	.....	46	.....	100	100	58
5 Athens	202	202	10	107	7	196	5	85	90	145
6 Aurora	109	109	7	45	4	75	.....	69	69	71
7 Beamsville	56	57	.....	12	.....	26	.....	40	40	36
8 Belleville	260	255	15	150	.....	140	.....	.....	150	85
9 Bowmanville	142	140	13	88	16	110	2	79	79	120
10 Bradford	137	140	.....	75	.....	124	.....	.....	58	62
11 Brampton	165	122	20	135	10	156	6	10	112	52
12 Brighton	69	48	.....	32	.....	53	.....	.....	.....	22
13 Caledonia	128	128	6	65	8	110	.....	79	79	76
14 Campbellford	172	164	8	68	6	98	4	94	94	91
15 Carleton Place	157	120	7	76	10	92	2	105	85	80
16 Cayuga	82	82	4	38	.....	57	.....	61	61	29
17 Chesley	105	105	8	71	9	100	2	.....	58	106
18 Colborne	71	53	.....	25	4	58	.....	36	36	35
19 Cornwall	252	252	22	175	20	182	6	112	112	294
20 Deseronto	101	100	8	63	15	56	1	72	72	30
21 Dundas	138	88	.....	79	6	112	.....	95	95	87
22 Dunnville	146	85	8	47	10	92	.....	97	97	62
23 Dutton	205	205	37	28	1	200	.....	110	110	179
24 East Toronto	98	98	4	86	12	90	6	84	84	92
25 Elora	76	53	14	40	12	76	.....	65	42	34
26 Essex	115	90	18	77	18	114	7	1	61	115
27 Fergus	135	135	12	75	23	106	5	80	80	117
28 Forest	127	82	12	96	34	109	.....	85	87	52
29 Fort William	88	86	2	78	3	78	.....	71	41	15
30 Gananoque	128	111	6	96	33	71	.....	52	52	81
31 Georgetown	148	148	4	27	4	109	1	125	125	32
32 Glencoe	108	108	11	48	.....	94	.....	5	58	55
33 Gravenhurst	76	74	1	36	.....	31	.....	47	47	27
34 Grimsby	79	46	.....	32	.....	41	.....	28	28	41
35 Hagersville	123	111	5	68	5	84	1	97	97	118
36 Harriston	116	116	17	40	34	98	.....	52	52	100
37 Hawkesbury	57	37	6	57	.....	47	.....	40	42	56
38 Iroquois	158	95	11	77	7	118	5	131	131	87
39 Kemptville	216	216	23	169	5	170	5	106	106	211
40 Kenora	83	83	1	39	.....	42	.....	27	27	13
41 Kincardine	148	148	10	97	16	121	3	78	76	121
42 Leamington	140	120	4	61	5	62	3	.....	60	53
43 Listowel	161	161	22	111	49	160	14	91	91	101
44 Lucan	161	159	17	73	6	132	.....	100	100	69
45 Madoc	73	39	.....	25	4	63	.....	.....	38	30
46 Markham	245	245	34	156	25	235	7	10	153	98
47 Meaford	158	158	16	92	21	156	.....	4	4	159
48 Midland	86	85	5	49	4	55	.....	40	78	84
49 Mitchell	119	86	.....	40	.....	61	.....	82	82	52
50 Mount Forest	134	134	7	38	3	120	1	2	79	129
51 Newburgh	149	148	.....	49	.....	82	.....	92	92	62
52 Newcastle	67	67	.....	26	6	38	.....	.....	20	18
53 Newmarket	128	115	.....	82	.....	85	.....	92	92	130
54 Niagara	50	33	.....	23	1	35	.....	.....	40	26
55 Niagara Falls South	76	22	.....	59	32	49	3	.....	.....	15
56 North Bay	95	72	6	78	4	73	.....	75	75	85
57 Norwood	160	162	.....	76	3	130	.....	.....	131	129

HIGH SCHOOLS.—*Continued.*

nd in the various subjects, etc.—*Continued.*

ubjects.—*Continued.*

	Physics.	Mineralogy.	Writing.	Bookkeeping.	Stenography.	Typewriting.	Art.	Physical Education.	Special Courses.				
									Commercial	Manual Training.	Household Science.	Arithmetic and English Grammar.	Art.
	31		95	95			95	147				31	52
2	111		67	73	34	19	91		22			35	
3	136		78	78			96						
4	140		89	89			100	140				51	
5	197		90	90			90					85	
6	109		69	69			69					41	
7	57		17	17			40					22	
8	260		164	164			164						
9	129	1	72	72	20		72	120					
10	136		91	72	48		91		16				
11	165		38	96	30	30	102					24	
12	47		26	26									
13	129		60	60			79					43	
14	99		60	103	25								
15	125		40	82			104					65	
16	83		44	44			50					20	
17	106		36	36			65	53				41	
18	53		36	36			36						
19	301		152	92	59	59	152	148	59			70	
20	101		72	60			72	72				21	
21	143		96	95	37	39	96	117	12			1	
22	134		90	79	38		82	142				24	
23	205		26	57			57					84	
24	92		86	86			86					7	
25	76		23	23								34	
26	119		25	40	10		60	90		52		28	
27	135		41	41				80				32	
28	122		59	59			59					47	
29	88		72	70	70		72	60	20			5	
30	108		58	58	30	30	28	140	30			25	
31	148		109	109	18	32	109					36	
32	98		53	53			53					44	
33	55		46	46	8		46	76	8			12	
34	60		53	53			55					11	
35	120		71	71			71					16	
36	110		35	35	26	20	55	51					
37	57		33	33			38					13	
38	158	8	89	89	15		125					43	
39	211		56	56			93					191	
40	82		68	49			54					1	
41	145		50	83	51	50	105					69	
42	110		40	40			72					42	
43	162		91	43			91	141					
44	150		61	61	10	30	61	141				39	
45	73		38	38			38					35	
46	224	72	143	143	40	10							
47	161		43	76	12	12	78	145				67	
48	85		55	78		8	40	85				31	
49	120		26	54			54	120				39	
50	129		77	77			77	59				50	
51	71		78	70	70		92						
52	40		43	25								15	
53	135		69	75	48	45	90	132	13			43	
54	26		40	40	38	31	40		3			10	
55	15		32	82	33	33	54	76				22	
56	86		60	60	19	27	60		13			22	
57	131		110	75			79	62					

COLLEGIATE INSTITUTES AND

II.—Table I.—Attendance, Pupils in the

	High Schools.	Pupils.				Number of pupils in			Number of pupils from		
		Boys.	Girls.	Total.	Average attendance.	Lower School.	Middle School.	Upper School.	Municipalities composing the High School District.	Municipalities within the County.	Other counties.
58	Oakville	55	66	121	73	86	35	.....	64	47	10
59	Omemee	28	28	56	35	20	36	.....	28	25	3
60	Orangeville	85	116	201	121	96	81	24	90	61	50
61	Oshawa	78	94	172	104	114	45	13	106	56	10
62	Paris	69	68	137	84	106	22	9	83	46	8
63	Parkhill	76	83	159	103	87	52	20	73	74	12
64	Pembroke	90	65	155	92	103	44	8	134	20	1
65	Petrolea	59	105	164	103	94	52	18	96	68	.....
66	Picton	82	118	200	123	108	78	14	112	85	3
67	Plantagenet	8	24	32	27	32	.....	.....	18	5	9
68	Port Arthur	27	55	82	49	67	14	1	82	.....	.....
69	Port Dover	33	46	79	53	48	31	.....	46	23	10
70	Port Elgin	46	40	86	61	45	35	6	56	29	1
71	Port Hope	95	144	239	151	123	87	29	130	109	.....
72	Port Perry	61	59	120	68	78	35	7	55	45	20
73	Port Rowan	38	28	66	41	48	18	.....	26	40	.....
74	Prescott	50	74	124	73	89	32	3	87	36	1
75	Richmond Hill	57	58	115	75	75	28	12	113	.....	2
76	Rockland	17	27	44	38	42	2	.....	27	12	5
77	Sault Ste. Marie	59	91	150	85	113	37	.....	112	38	.....
78	Simcoe	86	91	177	103	109	53	15	73	101	3
79	Smith's Falls	64	122	186	126	125	48	13	134	30	22
80	Smithville	36	35	71	43	41	30	.....	36	32	3
81	Stirling	29	34	63	40	37	21	5	24	39	.....
82	Streetsville	34	29	63	42	34	24	5	19	33	11
83	Sydenham	41	75	116	77	68	48	.....	116	.....	.....
84	Thorold	22	50	72	58	44	28	.....	52	13	7
85	Tillsonburg	52	73	125	77	82	43	.....	59	26	40
86	Toronto Technical	404	578	982	470	*690	†237	‡55	925	50	7
87	Trenton	82	95	177	104	124	31	22	117	18	42
88	Uxbridge	78	91	169	107	102	49	18	89	75	5
89	Vienna	12	25	37	18	17	20	.....	33	2	2
90	Walkerton	70	84	154	97	103	34	17	52	60	2
91	Wardsville	15	25	40	24	24	16	.....	21	14	5
92	Waterdown	53	66	119	72	68	42	9	84	11	24
93	Waterford	64	50	114	72	60	37	17	35	69	10
94	Watford	70	93	163	91	92	48	23	47	110	6
95	Welland	78	131	209	125	120	73	16	83	121	5
96	Weston	46	45	91	55	63	26	2	50	34	7
97	Wiarton	50	59	109	65	54	45	10	65	39	5
98	Williamstown	54	59	113	66	85	28	.....	110	.....	3
1	Totals, High Schools	6,038	7,419	13,457	8,218	8,341	4,192	924	7,851	4,719	887
2	Totals, Collegiate Institutes	6,997	8,207	15,204	9,349	9,851	4,059	1,294	10,721	3,751	732
3	Grand totals, 1905	13,035	15,626	28,661	17,567	18,192	8,251	2,218	18,572	8,470	1,619
4	Grand totals, 1904	12,718	14,991	27,709	16,730	17,879	7,855	1,975	17,784	8,217	1,708
5	Increases	317	635	952	837	313	396	243	788	253	.....
6	Decreases	.....	.....	.....	.....	.....	.....	.....	.....	.....	89
7	Percentages	45.48	54.52	.....	61.29	65.47	28.79	7.74	64.80	29.55	5.65

* First year. † Second year. ‡ Third year.

HIGH SCHOOLS.—*Continued.*

Schools and in the Various Subjects.—*Continued.*

Occupation of Parents.							Number of Pupils in the various subjects.											
Commerce.		Agriculture.	Professions.	Mechanical Occupations.	Laboring Occupations.	Other Callings.	English Grammar.	English Composition and Rhetoric.	English Literature.	Canadian History.	British History.	Ancient History.	Mediæval History.	Modern History.	Geography.	Reading.	Arithmetic and Mensuration.	Algebra.
58	22	55	12	17	10	5	120	120	120	120	120	34	.....	.....	99	96	120	82
59	4	30	7	5	8	2	56	56	56	56	56	36	.....	.....	56	56	56	56
60	50	90	21	30	2	8	183	196	199	186	199	102	.....	.....	142	130	188	198
61	35	58	11	50	10	8	164	172	172	158	158	58	.....	.....	160	130	164	169
62	28	53	13	38	4	1	112	130	130	60	72	22	.....	.....	94	84	121	114
63	34	88	14	8	12	3	139	159	159	139	159	72	.....	.....	139	87	139	144
64	47	18	15	39	26	10	147	153	153	122	150	51	.....	.....	121	103	147	155
65	38	43	8	25	38	12	137	164	164	137	137	70	.....	.....	105	105	137	164
66	54	85	13	22	24	2	194	199	199	145	136	77	.....	.....	176	108	193	177
67	6	19	.....	4	3	.....	32	32	32	32	32	.....	.....	32	32	32	32	32
68	40	5	20	11	5	1	78	78	78	78	78	14	.....	.....	76	69	78	59
69	11	36	4	10	.....	18	79	79	79	79	79	31	.....	.....	48	48	79	79
70	5	33	2	10	19	17	86	86	86	86	86	35	.....	.....	79	86	86	86
71	62	102	11	18	27	19	210	239	239	210	221	116	.....	.....	210	123	216	186
72	29	39	9	15	13	15	113	120	120	113	120	42	7	.....	113	120	113	108
73	17	30	1	6	4	8	48	66	66	66	66	33	.....	.....	62	48	48	64
74	31	28	9	20	23	13	86	124	121	86	86	32	.....	.....	85	85	87	124
75	30	57	4	7	8	9	112	114	115	47	58	48	.....	.....	77	75	101	110
76	6	15	2	6	11	4	41	44	44	44	44	2	.....	.....	39	44	44	44
77	45	12	17	47	20	9	150	150	150	147	150	37	.....	.....	150	128	150	150
78	32	70	16	36	18	5	162	175	175	162	175	68	.....	.....	162	109	162	165
79	49	52	10	50	22	3	181	186	186	125	184	61	.....	.....	173	186	182	186
80	3	58	.....	5	3	2	71	71	71	71	3	30	.....	.....	71	41	71	71
81	7	38	5	5	7	1	63	63	63	58	63	21	.....	.....	63	37	58	63
82	8	36	6	5	6	2	58	63	63	58	58	29	.....	.....	60	55	58	63
83	14	76	6	10	5	5	116	116	116	86	78	48	.....	.....	116	68	116	116
84	10	25	1	15	20	1	72	72	72	72	72	20	.....	.....	72	72	72	68
85	11	50	15	32	9	8	125	125	125	113	94	41	.....	.....	119	102	125	125
86	294	22	49	540	56	21	666	666	601	366	366	29	.....	.....	275	601	701	601
87	49	57	10	27	30	4	162	169	169	161	170	45	.....	.....	106	144	161	159
88	36	68	15	38	7	5	151	169	169	151	163	162	.....	.....	147	102	151	167
89	4	27	2	4	.....	.....	37	37	37	37	37	21	.....	.....	36	19	36	36
90	46	42	17	20	14	15	146	154	149	137	149	46	.....	.....	133	137	146	150
91	2	26	7	3	1	1	39	39	39	39	39	15	.....	.....	39	24	39	39
92	13	51	12	23	16	4	119	119	119	110	119	51	.....	.....	110	119	110	119
93	21	73	7	4	2	7	104	108	108	104	108	49	.....	108	100	108	108	104
94	34	89	8	28	4	.....	140	154	154	150	154	101	.....	.....	140	92	140	154
95	80	57	28	41	2	1	189	205	205	99	204	48	.....	.....	123	120	193	205
96	17	34	12	9	10	9	91	91	91	60	86	27	.....	91	77	63	89	91
97	20	30	10	37	12	.....	109	109	109	99	109	55	.....	.....	99	54	99	109
98	5	67	8	12	8	13	113	113	113	100	41	28	.....	.....	111	72	112	112
1	2,895	4,961	1,107	2,665	1,180	649	11,971	12,711	12,945	11,079	11,898	4,724	66	554	11,057	9,222	11,955	10,534
2	4,596	3,425	1,573	3,638	971	1,001	13,428	14,456	14,830	11,487	12,077	4,811	.....	326	10,946	10,702	13,500	13,313
3	7,491	8,386	2,680	6,303	2,151	1,650	25,399	27,667	27,775	22,566	23,975	9,535	66	880	22,003	19,924	25,455	23,847
4	7,645	8,516	2,604	7,099	.....	1,845	25,019	27,298	27,070	19,014	21,520	9,142	74	1,993	18,493	19,632	25,249	25,143
5	.....	.....	.....	.....	.....	.....	389	369	705	3,552	2,455	393	.....	.....	3,510	292	206	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8	1,113	.....	.....	.....	1,296
7	26.14	29.20	9.36	21.99	7.55	5.76	88.62	96.53	96.98	78.73	83.61	33.27	.23	3.74	76.84	69.51	88.81	83.2

COLLEGIATE INSTITUTES AND

II.—Table I.—Attendance, Pupils in the

High Schools.	Number of pupils in								
	Geometry.	Trigonometry.	French.	German.	Latin.	Greek.	Zoology.	Botany.	Chemistry.
58 Oakville	82	.....	28	3	78	.....	69	69	103
59 Omemee	56	2	20	.....	36	.....	.....	26	36
60 Orangeville	192	24	164	27	152	8	70	70	135
61 Oshawa	91	13	106	40	123	4	.....	129	45
62 Paris	74	9	40	12	66	4	85	85	38
63 Parkhill	144	20	72	8	101	4	74	74	66
64 Pembroke	155	8	81	12	115	2	61	103	51
65 Petrolea	164	18	57	4	134	.....	103	100	124
66 Picton	118	9	125	22	140	1	95	117	159
67 Plantagenet	32	.....	32	.....	14	.....	.....	32	32
68 Port Arthur	56	1	61	7	55	1	45	45	58
69 Port Dover	79	.....	21	3	67	1	48	48	53
70 Port Elgin	86	6	40	14	78	1	86	86	35
71 Port Hope	182	29	137	15	156	3	45	45	84
72 Port Perry	164	6	59	9	71	6	.....	60	65
73 Port Rowan	60	.....	30	.....	41	.....	46	46	33
74 Prescott	62	1	41	4	57	.....	43	43	31
75 Richmond Hill	78	6	77	5	74	1	60	70	31
76 Rockland	44	.....	44	.....	28	.....	.....	.....	.....
77 Sault Ste. Marie	150	.....	82	.....	130	.....	128	128	143
78 Simcoe	127	15	50	20	90	3	109	109	65
79 Smith's Falls	186	13	143	13	151	3	125	125	112
80 Smithville	49	.....	12	2	61	2	41	41	71
81 Stirling	63	5	21	.....	62	.....	42	42	51
82 Streetsville	47	5	46	5	60	.....	53	55	58
83 Sydenham	116	.....	94	7	101	.....	95	68	32
84 Thorold	60	.....	58	.....	48	.....	50	50	28
85 Tillsonburg	125	.....	81	.....	82	.....	107	107	43
86 Toronto Technical	601	60	490	.....	.....	.....	.....	.....	251
87 Trenton	124	16	81	30	134	.....	53	35	111
88 Uxbridge	108	16	107	16	92	2	102	102	150
89 Vienna	36	1	6	.....	25	.....	24	24	35
90 Walkerton	93	14	30	53	127	4	65	47	40
91 Wardsville	29	.....	3	.....	22	.....	34	34	29
92 Waterdown	119	9	100	10	112	4	110	68	42
93 Waterford	83	5	48	15	97	2	68	68	77
94 Watford	154	13	61	10	151	.....	90	92	155
95 Welland	142	15	114	21	162	4	120	120	86
96 Weston	54	1	49	13	70	.....	54	54	24
97 Wiarton	109	6	12	4	100	.....	54	54	71
98 Williamstown	75	.....	75	.....	90	.....	72	72	112
1 Totals, High Schools	10,964	806	6,932	885	9,033	158	5,857	7,029	7,403
2 " Collegiate Institutes	11,159	1,107	9,498	2,481	10,376	445	4,616	6,540	5,019
3 Grand totals, 1905	22,123	1,913	16,430	3,366	19,409	603	10,473	13,569	12,413
4 " " 1904	20,519	1,759	16,039	3,274	19,409	637	4,764	11,463	9,038
5 Increases	1,604	154	391	92	.....	.....	5,709	2,106	3,375
6 Decreases	.....	.....	.....	.....	.....	34	.....	.....	.....
7 Percentages	77.18	6.6	57.3	11.7	67.71	2.1	36.54	47.34	43.3

HIGH SCHOOLS.—*Continued.*

Schools and in the various subjects.—*Concluded.*

the various subjects.—*Continued.*

	Physics.	Mineralogy.	Writing.	Bookkeeping.	Stenography.	Typewriting.	Art.	Physical Education.	Special Courses.				
									Commercial	Manual Training.	Household Science.	Arithmetic and English Grammar.	Art.
58	103	.....	41	84	42	40	84	.....	38	.....	.....	27	.....
59	56	.....	20	12	.....	.....	12	.....	.....	.....	.....	.....	.....
60	199	.....	85	85	.....	.....	87	.....	.....	.....	.....	88	.....
61	156	.....	89	103	50	58	86	.....	23	.....	.....	.....	.....
62	106	.....	72	72	57	38	84	.....	22	.....	.....	15	.....
63	72	.....	87	74	52	74	87	.....	32	.....	.....	52	.....
64	53	.....	101	101	.....	.....	101	.....	.....	.....	.....	18	.....
65	164	.....	54	54	54	10	85	59	.....	.....	.....	52	.....
66	176	.....	95	54	18	25	58	.....	25	.....	.....	.....	.....
67	32	.....	32	32	.....	.....	32	.....	.....	.....	.....	.....	.....
68	58	.....	58	60	25	26	60	.....	22	.....	.....	.....	.....
69	75	.....	18	16	.....	16	16	.....	.....	.....	.....	31	.....
70	86	.....	45	45	.....	.....	45	86	.....	.....	.....	25	.....
71	95	.....	123	85	63	76	65	.....	63	.....	.....	43	.....
72	70	.....	95	95	24	.....	.....	110	6	.....	.....	.....	.....
73	66	.....	33	45	.....	.....	48	.....	.....	.....	.....	18	.....
74	79	.....	52	62	45	18	52	.....	7	.....	.....	32	.....
75	115	.....	75	75	.....	19	75	.....	5	.....	.....	.....	.....
76	8	.....	39	39	.....	.....	39	.....	.....	.....	.....	.....	.....
77	150	.....	98	98	65	.....	102	.....	.....	.....	.....	22	.....
78	175	.....	109	60	20	.....	109	109	.....	.....	.....	35	.....
79	186	.....	140	140	23	34	140	.....	.....	.....	.....	48	.....
80	71	.....	.....	22	.....	.....	41	.....	.....	.....	.....	30	.....
81	63	.....	37	37	.....	.....	37	.....	.....	.....	.....	21	.....
82	58	.....	16	31	.....	.....	34	.....	.....	.....	.....	24	.....
83	116	.....	38	38	.....	.....	38	.....	.....	.....	.....	.....	.....
84	72	.....	40	40	45	45	25	.....	.....	.....	.....	10	.....
85	125	.....	68	68	.....	.....	101	.....	.....	.....	.....	50	.....
86	251	.....	494	494	494	494	313	.....	494	.....	358	.....	3.3
87	124	.....	89	89	33	8	82	.....	11	.....	.....	15	.....
88	167	.....	59	59	.....	.....	102	169	.....	.....	.....	49	.....
89	37	.....	18	18	1	.....	20	12	.....	.....	.....	.....	.....
90	114	.....	133	83	29	24	49	.....	.....	.....	.....	18	.....
91	38	.....	24	24	.....	.....	24	.....	.....	.....	.....	14	.....
92	119	.....	68	68	.....	.....	68	.....	.....	.....	.....	42	.....
93	113	.....	60	60	.....	.....	68	.....	.....	.....	.....	37	.....
94	163	.....	52	52	.....	25	92	75	.....	.....	.....	42	.....
95	209	.....	53	76	.....	.....	120	.....	.....	.....	.....	23	.....
96	54	.....	54	54	1	3	54	.....	.....	.....	.....	12	.....
97	78	.....	54	54	.....	.....	54	.....	.....	.....	.....	36	.....
98	112	.....	72	72	.....	.....	72	.....	.....	.....	.....	28	.....
1	11,063	81	6,631	6,676	1,930	1,508	6,899	3,020	944	52	358	2,644	365
2	10,838	8	7,843	6,476	2,627	1,837	6,742	11,685	1,984	1,234	1,192	2,214	124
3	21,901	89	14,474	13,152	4,557	3,345	13,641	14,705	2,928	1,286	1,550	4,858	489
4	17,837	186	13,156	14,334	4,804	3,178	11,596	4,629	3,006	1,300	1,117	5,117	425
5	4,064	.....	1,318	.....	.....	167	2,045	10,076	.....	.....	433	.....	64
6	.....	97	.....	1,182	247	.....	.....	.....	78	14	.....	259	.....
7	76.41	.31	50.5	45.88	15.89	11.67	47.59	51.3	9.16	4.48	5.4	16.94	1.76

COLLEGIATE INSTITUTES AND

III.—Table K.—Miscellaneous

Collegiate Institutes.	Brick, stone or frame school house.	Number of acres in playground.	Schools under United Board.	Equip- Value of Library.	Value of Typewriters.	Value of Scientific Apparatus.	Value of Charts, Maps and Globes.	Value of Models for Drawing.	Value of Gymnasium (not including equipment.)
				$	$	$	$	$	$
1 Aylmer	B	4	.....	664	.....	673	140	33	680
2 Barrie	B	3	.....	620	180	744	136	5	1,730
3 Berlin	B	4	.....	712	835	1,384	115	20	1,000
4 Brantford	B	1/4	.....	641	215	885	108	27	1,000
5 Brockville	S	3	.....	823	112	1,145	191	10	.....
6 Chatham	B	11/2	.....	786	500	1,541	201	12	600
7 Clinton	B	31/4	.....	697	125	847	128	5	765
8 Cobourg	B	1	.....	641	480	843	146	8	*
9 Collingwood	B	1/4	1	669	150	647	96	8	1,200
10 Galt	S	81/2	.....	1,112	367	1,227	67	9	1,200
11 Goderich	B	1/4	.....	673	265	586	71	20	2,500
12 Guelph	S	4	1	1,010	285	892	164	12	2,500
13 Hamilton	B & S	3	1	1,016	90	1,546	209	25	*
14 Ingersoll	B	2	1	695	180	759	121	4	811
15 Kingston	B	2	1	733	600	689	75	25	.....
16 Lindsay	B	2	1	1,420	250	1,137	154	10	600
17 London	B	3	1	972	560	3,046	173	43	*
18 Morrisburg	B	1	1	689	207	1,265	167	17	980
19 Napanee	B	31/2	1	944	245	931	126	18	800
20 Niagara Falls	B	3/4	.....	783	315	622	88	25	1,063
21 Orillia	B	2	.....	642	270	530	110	68	1,800
22 Ottawa	S	1	.....	1,288	871	1,800	292	150	.....
23 Owen Sound	B	3	1	1,399	225	1,850	129	20	.....
24 Perth	B	4	1	791	.....	833	155	10	560
25 Peterborough	B	11/2	1	649	265	1,026	159	25	.....
26 Renfrew	B	31/2	1	589	150	619	70	12	.....
27 Ridgetown	B	1/4	.....	693	180	1,130	143	48	900
28 St. Catharines	B	1/4	.....	631	270	815	135	18	900
29 St. Mary's	B	2	.....	735	140	699	120	25	700
30 St. Thomas	B	21/4	1	929	660	1,125	110	18	1,323
31 Sarnia	B	21/2	1	811	315	758	127	12	1,380
32 Seaforth	B	23/4	.....	794	180	804	138	2	600
33 Stratford	B	8	.....	1,041	450	1,211	220	26	.....
34 Strathroy	B	11/4	.....	958	180	885	116	28	380
35 Toronto (Harbord)	B	11/2	1	1,315	.....	2,267	175	28	4,000
36 Toronto (Jameson)	B	11/2	1	1,683	.....	2,293	155	15	4,000
37 Toronto (Jarvis)	B	11/2	1	1,252	.....	1,529	181	35	8,000
38 Toronto Junction	B	3/4	.....	943	270	888	107	32	.....
39 Vankleek Hill	B	23/4	.....	623	180	768	46	3	3,000
40 Whitby	B	1	1	631	.....	550	115	10	850
41 Windsor	B	23/4	1	984	881	990	130	35	3,000
42 Woodstock	B	1	.....	1,046	480	1,523	51	15	1,000
Totals	.....	.....	20	36,727	11,928	46,302	5,660	971	49 822

* Gymnasium is part of main building.

HIGH SCHOOLS.—*Continued.*

Information.

	ment.		Religious and other Exercises					Destination of Pupils.					
	Value of Equipment of Gymnasium.	Value of Museum, Aquarium, etc.	Schools using authorized Scripture Readings.	Schools opened with Prayer.	Schools closed with Prayer.	Schools using Bible.	Commencement Exercises.	Number who entered mercantile life.	Number who became occupied with Agriculture.	Number who entered the professions of Law, Medicine and the Church.	Number who became teachers.	Number who entered any other profession.	Number who left for other occupations.
	$	$											
1	85	400	.....		1	.....	.....	7	14	4	13	4	17
2	90	.....	.....		1	.....	.....	11	4	7	17	1	13
3	502	200	1		1	1	1	29	12	6	10	12	21
4	117	.....	.....		1	1	.....	19	6	7	14	3	52
5	.....	.....	.....		1	1	1	10	5	3	15	5	61
6	154	1			1	.....	.....	52	18	.....	12	2	37
7	63	1			1	1	1	13	5	5	12	.....	17
8	160	1			1	.....	.....	15	6	4	20	2	12
9	40	.....	.....		1	.....	.....	25	5	9	32	5	23
10	231	40	1		1	.....	1	13	9	3	15	6	26
11	225	.....	1		1	.....	1	15	4	5	16	.....	40
12	557	175	.....		1	.....	1	20	1	3	18	7	42
13	909	50	1		1	1	1	70	60	15	40	5	42
14	231	25	1		1	.....	1	7	3	.....	7	.....	27
15	.....	100	1		1	1	.....	17	9	7	13	8	120
16	126	45	.....		1	.....	1	32	14	15	14	9	27
17	298	700	.....		1	.....	1	99	22	18	42	20	127
18	188	200	1		1	.....	1	26	11	4	24	2	16
19	252	.....	1		1	1	1	13	22	1	12	4	23
20	126	.....	.....		1	1	1	.....	2	2	5	10	44
21	250	.....	.....		1	1	.....	26	4	.....	29	.....	43
22	236	.....	1		1	1	1	49	2	19	7	19	82
23	25	.....	.....		1	.....	1	26	6	5	35	18	49
24	267	500	1		1	.....	1	5	4	1	9	8	36
25	.....	.....	.....		1	.....	.....	20	6	10	16	10	43
26	.....	.....	1		1	.....	1	18	.....	5	14	1	14
27	90	10	.....		1	.....	1	13	8	4	11	3	23
28	70	75	1		1	.....	1	41	15	4	8	7	23
29	84	.....	.....		1	.....	1	13	12	1	19	7	10
30	374	.....	.....		1	.....	.....	78	27	8	9	5	23
31	248	.....	.....		1	.....	1	26	5	2	17	4	28
32	66	.....	1		1	.....	.....	8	3	2	16	12	21
33	117	500	.....		1	.....	1	20	3	3	9	4	45
34	104	.....	1		1	.....	1	10	15	8	8	5	15
35	700	.....	.....		1	.....	1	26	.....	1	3	9	86
36	790	.....	1		1	1	1	25	2	9	4	.....	80
37	200	570	.....		1	1	1	40	4	12	4	35	71
38	.....	.....	1		1	.....	1	15	6	9	12	8	19
39	236	.....	.....		1	.....	1	8	3	3	18	.....	9
40	209	.....	.....		1	1	1	4	4	.....	5	3	12
41	200	300	.....	.....	.....	.....	1	29	5	8	5	6	50
42	180	80	.....	1	.....	.....	1	†30	†7	†6	†11	†5	†36
	8,800	3,970	19	41	1	13	31	1,026	370	246	608	274	1,605

† Estimated.

COLLEGIATE INSTITUTES AND

III.—Table K.—Miscellaneous

High Schools.	Brick, Stone or Frame School House.	Number of acres in playground.	Schools under united Board.	Equipment.					
				Value of Library.	Value of Typewriters.	Value of Scientific Apparatus.	Value of Charts, Maps and Globes.	Value of Models for Drawing.	Value of Gymnasium not including equipment.
				$	$	$	$	$	$
1 Alexandria	B	1½		383		453	85	23	
2 Almonte	S	1	1	920	135	480	78	12	
3 Arnprior	B	1	1	308		367	89	16	
4 Arthur	B	2½		328	95	675	38	31	
5 Athens	S	2		516		477	69	10	
6 Aurora	B	3		419		459	69	8	
7 Beamsville	B	1	1	326		287	70	6	
8 Belleville	B	1½	1	304		569	174	21	
9 Bowmanville	B	2¼		610		537	60	8	
10 Bradford	B	3		333	35	339	100	42	
11 Brampton	B	5		479	65	639	66	34	
12 Brighton	B	½	1	298		319	42	10	
13 Caledonia	B	2	1	482		494	33	4	
14 Campbellford	B	½	1	371		503	29		
15 Carleton Place	S	1	1	721		352	65	8	
16 Cayuga	B	1		218		368	54		
17 Chesley	B	5		301		311	46		
18 Colborne	B	¾	1	268		381	117	5	
19 Cornwall	B	½		518	315	425	126	13	
20 Deseronto	B	3¾		346		395	87	4	300
21 Dundas	B	4	1	482	95	548	109	20	
22 Dunnville	B	1¼		390		573	65	23	
23 Dutton	B	1		213		525	31		
24 East Toronto	B			289		279	30	6	
25 Elora	S	½		233	45	358	43	2	
26 Essex	B	3½		373		492	70	28	500
27 Fergus	S	1	1	303		271	76	9	
28 Forest	B	2		317		443	94	22	
29 Fort William	B	¾		169		216	57	3	
30 Gananoque	B	1	1	598	145	579	114	19	
31 Georgetown	B	4½		257	65	464	76	10	
32 Glencoe	B	2		408		547	55	28	
33 Gravenhurst	B	7½		265		387	58	5	
34 Grimsby	B	1½	1	210		287	29	10	
35 Hagersville	B	1½		341		545	54	28	
36 Harriston	B	3		66	37	343	22		
37 Hawkesbury	B	1¼	1	141		234	25		
38 Iroquois	B	¾		641	50	1,214	142	18	
39 Kemptville	B	2	1	309		424	68		
40 Kenora	B	1	1	217		453	53		
41 Kincardine	B	4	1	583	520	744	82	34	
42 Leamington	B	1¼		266		419	92	32	
43 Listowel	B	2		333		518	55		250
44 Lucan	B	3		260	90	613	73	18	
45 Madoc	B	1		165		515	90		
46 Markham	B	2¼		280		850	55	38	
47 Meaford	B	2½		357	270	462	81	7	1,250
48 Midland	B	6		285	95	716	25		
49 Mitchell	B	¼		234		429	64	21	566
50 Mount Forest	B	2½		448		599	43		
51 Newburgh	S	1½	1	477		338	85		
52 Newcastle	B	¾	1	219		326	52	4	
53 Newmarket	B	1½		227	213	583	74	23	350
54 Niagara	B	½		134	100	166	70	16	
55 Niagara Falls South	B	2		286	95	357	41	3	
56 North Bay	B	2		20	360	324			
57 Norwood	B	8	1	362		341	21	2	

HIGH SCHOOLS—*Continued.*

Information.—*Continued.*

	Equipment.—*Con.*		Religious and other Exercises.					Destination of Pupils.					
	Value of Equipment of Gymnasium.	Value of Museum, Aquarium, etc.	Schools using authorized Scripture Readings.	Schools opened with Prayer.	Schools closed with Prayer.	Schools using Bible.	Commencement Exercises.	Number who entered mercantile life.	Number who became occupied with Agriculture.	Number who entered the professions Law, Medicine and the Church.	Number who became teachers.	Number who entered any other profession.	Number who left for other occupations.
	$	$											
1				1			1	2	2	1	6		7
2				1		1	1	15	1	3	5	5	26
3	38			1				6	1	1	14	3	20
4	13			1			1	8	11	2	3	2	4
5	4		1	1			1	2	5	2	37	2	4
6				1		1	1	13	10		8		9
7				1				8	6		6		5
8				1		1		18	3		12	20	43
9	2	2	1	1		1	1	11	13	3	8	3	12
10	43			1		1	1	5	10	3	6		5
11	10			1			1	6	12	18	11	9	3
12			1	1			1	4	4		2		13
13				1			1	3	12		11		8
14		50	1	1			1	12	6	1	10	2	16
15				1			1	11	3		9	2	21
16				1			1	6	4	1	3	1	9
17		5		1		1	1	2	3		2	1	3
18			1	1				3	1		3		7
19			1	1				33	7	1	19	1	16
20	210	50					1	8	2	1	6	1	14
21	39	50		1			1	17	8	4	9		12
22				1				20	7		2	1	27
23				1			1	11	12	5	6		5
24				1				10		1		2	13
25			1	1		1		2	3	1	2	3	9
26	220	50	1	1			1	4	2		15	3	14
27				1			1	7	3	2	11	2	6
28				1			1	3	1	3	5	4	21
29				1			1	11					7
30			1	1			1	9	4	4	7	1	13
31	5		1	1		1	1	6	4		4		13
32				1			1	5	4	3	2	1	11
33		500	1	1				4			2		9
34			1	1			1	6	4		2		5
35				1		1		5	11	6	4	2	5
36			1	1	1	1	1	12	5	5	8	6	7
37				1				1	2		1		9
38		275	1	1			1		11	1	4	4	12
39	18			1			1	15	15	12	20		6
40				1				4	1	1	1	5	9
41		27			1	1	1	24	10	5	12		2
42	15		1	1			1	6	8		8	3	10
43	42			1			1	5		2	17	1	16
44				1			1	1	3		6	4	4
45			1	1		1		3	1	2	8	2	3
46	13		1	1		1		18	18	2	10	7	12
47	239			1		1	1	6	7	1	17	1	21
48			1	1			1	1	3	1	2	2	12
49	233		1	1			1	8	5	1	1	6	36
50	10		1	1		1	1	3	1	1	14	3	12
51				1					2	3	9	4	8
52			1	1			1		7		3		8
53	97			1		1	1	1	4	1	8	3	37
54		10		1			1	1	2		2		11
55	30			1				5	4		1		17
56			1	1		1		2		3	2	1	
57				1		1	1	5	10	2	15	1	2

COLLEGIATE INSTITUTES AND

III.—Table K.—Miscellaneous

High Schools.	Brick, Stone or Frame School House.	Number of acres in playground.	Schools under United Board.	Equip- Value of Library.	Value of Typewriters.	Value of Scientific Apparatus.	Value of Charts, Maps and Globes.	Value of Models for Drawing.	Value of Gymnasium, (not including equipment.)
				$	$	$	$	$	$
58 Oakville	B	1 1/2	1	271	150	252	59	3	.....
59 Omemee	B	1 1/4	1	.....	.....	141	4	.....	.....
60 Orangeville	B	2 1/2	.....	664	.....	590	57	26	.....
61 Oshawa	B	3	1	280	200	437	113	14	.....
62 Paris	B	4	1	363	142	559	108	9	.....
63 Parkhill	B	3	1	316	140	514	100	3	.....
64 Pembroke	B	3/4	1	278	.....	509	94	15	.....
65 Petrolea	B	2 1/2	.....	407	90	622	44	5	.....
66 Picton	B	3	.....	665	450	684	118	45	.....
67 Plantagenet	B	1	.....	100	.....	56	17	.....	.....
68 Port Arthur	B & S	3	1	370	180	434	102	.....	.....
69 Port Dover	B	1	1	400	100	437	23	20	.....
70 Port Elgin	B	1 1/2	.....	241	.....	404	48	30	300
71 Port Hope	B	1 1/2	.....	583	350	600	96	8	.....
72 Port Perry	B	3	1	288	.....	457	44	8	200
73 Port Rowan	B	2 1/2	1	110	.....	198	44	6	.....
74 Prescott	B	1 1/2	1	285	120	370	112	18	.....
75 Richmond Hill	B	1	1	189	.....	316	54	35	3
76 Rockland	B	.....	.....	.....	.....	.....	.....	.....	.....
77 Sault Ste. Marie	B	.....	.....	263	.....	306	35	18	.....
78 Simcoe	B	5	1	354	.....	689	140	29	.....
79 Smith's Falls	B	3/4	1	554	110	495	67	5	.....
80 Smithville	B	1 1/2	.....	130	.....	297	40	.....	.....
81 Stirling	B	1	1	195	.....	291	42	.....	.....
82 Streetsville	B	1/2	.....	242	.....	254	71	2	.....
83 Sydenham	S	1 1/2	.....	370	.....	337	37	.....	.....
84 Thorold	B	2 1/4	.....	261	180	424	69	3	.....
85 Tillsonburg	B & S	3 1/4	.....	281	.....	503	84	2	.....
86 Toronto Technical	B	1/2	1	380	1,040	7,262	25	458	.....
87 Trenton	B	1 3/4	1	571	155	400	76	7	.....
88 Uxbridge	B	1/2	1	349	.....	334	84	4	.....
89 Vienna	B	1	1	475	.....	243	121	10	.....
90 Walkerton	B	1 1/4	.....	336	180	537	54	3	.....
91 Wardsville	B	2	1	227	.....	199	28	33	.....
92 Waterdown	S	3 1/4	1	234	.....	320	58	15	.....
93 Waterford	B	3	.....	374	.....	410	64	.....	.....
94 Watford	B	2	.....	345	100	405	110	47	.....
95 Welland	B	1	.....	238	.....	598	32	.....	.....
96 Weston	B	1/2	.....	280	50	443	105	15	.....
97 Wiarton	S	3	.....	326	.....	302	53	.....	.....
98 Williamstown	S & B	3	.....	277	.....	355	87	10	.....
1 Totals, High Schools	.....	.....	41	32,479	5,562	49,297	6,460	1,590	3,719
2 Totals, Collegiate Institutes	.....	.....	20	26,727	11,928	46,302	5,660	971	49,822
3 Grand totals, 1905	.....	.....	61	59,206	17,490	95,599	12,120	2,561	53,541
4 Grand totals, 1904	.....	.....	61	67,283	16,388	90,611	12,395	2,522	53,498
5 Increases	.....	.....	.....	.....	1,102	4,988	.....	39	43
6 Decreases	.....	.....	.....	8,077	.....	.....	275	.....	.....
7 Percentages	.....	.....	43.57	.....	.....	.....	.....	.....	.....

HIGH SCHOOLS.—*Concluded.*

Information.—*Concluded.*

	ment.		Religious and other Exercises.					Destination of Pupils.					
	Value of Equipment of Gymnasium.	Value of Museum, Aquarium, etc.	Schools using authorized Scripture Readings.	Schools opened with Prayer.	Schools closed with Prayer.	Schools using Bible.	Commencement Exercises.	Number who entered mercantile life.	Number who became occupied with Agriculture.	Number who entered the professions of Law, Medicine and the Church.	Number who became teachers.	Number who entered any other profession.	Number who left for other occupations.
	$	$											
58	.....	.....	1	1	.....	.....	1	8	2	.....	2	.....	8
59	.....	.....	.....	1	.....	.....	1	12	1	.....	10	2	1
60	.....	.....	.....	1	.....	.....	1	15	2	3	16	2	15
61	.....	50	1	1	.....	.....	.....	17	13	1	6	3	22
62	.....	.....	1	1	.....	1	1	9	2	1	.....	5	16
63	44	50	.....	1	.....	.....	1	9	3	3	4	2	10
64	.....	50	.....	1	.....	.....	1	15	6	2	12	6	12
65	.....	50	1	1	.....	1	.....	21	6	.....	12	.....	8
66	.....	.....	.....	1	.....	.....	.....	5	3	.....	6	.....	12
67	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
68	.....	.....	.....	1	.....	.....	1	5	.....	.....	2	.....	25
69	7	.....	.....	1	.....	.....	1	9	2	.....	4	3	3
70	55	.....	.....	1	.....	1	.....	7	5	.....	3	.....	10
71	.....	.....	1	1	.....	.....	1	23	1	1	7	2	22
72	.....	10	.....	1	.....	.....	1	17	10	6	12	2	1
73	8	.....	1	1	.....	.....	1	2	3	1	2	.....	5
74	29	.....	.....	1	.....	.....	1	9	3	.....	7	.....	17
75	597	.....	1	1	.....	1	1	3	3	1	2	1	8
76	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	2
77	.....	.....	.....	1	.....	.....	1	8	.....	2	13	3	24
78	.....	.....	1	1	.....	1	1	15	13	5	14	3	10
79	.....	.....	.....	1	.....	.....	1	9	18	.....	13	4	20
80	.....	.....	.....	1	1	1	.....	2	3	.....	7	.....	2
81	.....	.....	.....	1	.....	1	.....	10	2	.....	3	.....	.....
82	.....	25	1	1	.....	.....	.....	2	2	.....	3	.....	6
83	.....	25	.....	1	1	1	.....	2	2	.....	16	.....	12
84	.....	.....	.....	1	.....	1	1	4	10	.....	4	2	4
85	11	150	.....	1	.....	.....	.....	9	1	1	4	.....	8
86	.....	50	.....	1	.....	.....	1	199	.....	.....	.....	.....	233
87	.....	.....	1	1	.....	.....	.....	10	7	2	6	11	17
88	.....	10	1	1	1	.....	1	6	5	.....	6	1	23
89	.....	.....	1	1	.....	.....	1	2	.....	.....	2	.....	.....
90	7	.....	1	.....	.....	.....	1	12	.....	4	7	1	19
92	.....	.....	.....	1	.....	.....	.....	3	3	.....	.....	.....	4
02	.....	.....	.....	1	.....	.....	1	6	10	7	8	.....	6
93	.....	.....	1	1	.....	1	.....	8	11	.....	15	.....	3
94	.....	.....	.....	1	.....	.....	1	.....	16	1	15	3	.....
95	.....	.....	.....	1	.....	1	1	15	5	2	5	1	21
96	.....	.....	.....	1	.....	1	1	.....	2	.....	4	.....	7
97	.....	.....	.....	1	.....	.....	1	4	4	5	12	2	3
98	.....	.....	.....	1	.....	.....	.....	4	12	1	12	.....	7
	2,039	1,489	36	94	6	30	66	923	489	158	697	183	1,295
	8,800	3,970	19	41	1	13	31	1,026	370	246	608	274	1,605
	10,839	5,459	55	135	7	43	97	1,949	859	404	1,305	457	2,900
	11,356	3,687	61	133	38	41	95	1,834	811	331	1,240	408	2,406
	.....	1,772	.....	2	.....	2	2	115	48	73	65	49	494
	517	.....	6	.....	31	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	39.3	96.4	5	3.1	69.3	24.7	10.9	5.1	16.6	5.8	36.8

TABLE L.—PROTESTANT SEPARATE SCHOOLS.

	No. 9 Cambridge.	No. 6 North Plantagenet.	No. 1 North Tilbury.	L'Original, Village.	Penetanguishene, Town.	Totals.
Number of Schools	1	1	1	1	1	5
Receipts:	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Balances from 1904	6 22	209 80	53 79	448 14	14 19	732 14
Government grants	2 00	2 80	17 99	18 00	113 88	154 67
Municipal grants & assessments	65 84	200 00	698 95	.....	2,425 00	3,389 79
Other sources	.....	117 10	120 00	8 28	6 50	251 88
Totals	74 06	529 70	890 73	474 42	2,559 57	4,528 48
Expenditure:						
Teachers' salaries	58 50	225 00	306 00	318 75	1,660 67	2,568 92
School sites and buildings	.....	42 00	134 13	.....	270 35	446 48
Libraries, maps, apparatus, etc	.....	.....	.....	.....	.....	.....
Other expenses	2 81	215 73	168 28	114 85	509 95	1,011 62
Totals	61 31	482 73	608 41	433 60	2,440 97	4,027 02
Balances on hand	12 75	46 97	282 32	40 82	118 60	501 46
Teachers:						
Male	.....	.....	.....	1	1	2
Female	1	1	1	.....	3	6
Certificates	Temp.	III	III	III	II ; 2 II ; 1 III.	1 I; 2 II; 4 III; 1 Temp.
Salaries	$156 00	$275 00	$306 00	$375 00	Male $650 00 Female $358 00	Av. male $512 00 Av. female $302 00
Pupils:						
Total number attending	15	14	30	29	232	320
Boys	8	8	17	19	133	185
Girls	7	6	13	10	99	135
Average attendance	4	3	19	16	150	192
No. in 1st Reader, Part I	7	7	7	6	69	96
" 1st " Part II	2	1	5	5	30	43
" 2nd "	2	2	4	2	42	52
" 3rd "	4	2	10	5	30	51
" 4th "	.....	1	4	11	61	77
" 5th or High S. Reader	.....	1	.....	.....	.....	1
No. in Art	8	14	30	29	90	320
" Geography	8	14	23	18	232	295
" Music	.....	14	.....	.....	232	246
" Literature	8	14	23	18	232	295
" Composition	8	14	30	23	232	307
" Grammar	4	5	14	16	90	129
" English History	.....	4	4	4	90	102
" Canadian History	4	4	14	17	108	147
" Physiology & Hygiene	4	4	30	17	140	195
" Nature Study	8	14	30	29	232	313
" Physical Culture	6	14	30	.....	232	282
" Bookkeeping	.....	1	.....	.....	.....	1
" Algebra	.....	1	.....	.....	.....	1
" Geometry	.....	1	.....	.....	.....	1
" Latin	.....	1	.....	.....	.....	1
" Elementary Science	.....	1	.....	.....	.....	1
" Commercial Subjects	.....	1	.....	.....	.....	1
" Agriculture	.....	4	.....	.....	69	73
Brick, frame or log school house	Log	Frame	Brick	Brick	Brick	3 B.; 1 F.; 1 L.
Number of maps	5	9	5	21	15	55
Number of globes	.....	.....	1	2	.....	3

TABLE M.—REPORT ON TRUANCY.

Cities.	No. of children otherwise employed during school hours.	No. of cases of truancy reported to the Truant Officer.	No. of notices sent by Truant Officer to parents or guardians.	No. of complaints made before Police Magistrates or J. P.'s.	No. of convictions.	No. of children not attending any school.
Brantford	4	19	15	15	..	..
Chatham	..	33	24	2	2	..
Guelph	4	13	16	1	..	2
Hamilton	..	130	415	64	19	64
Niagara Falls	5	26	62	1	1	95
Peterborough	..	50	31	2	1	..
St. Catharines	..	169	47	1	1	..
St. Thomas	9	94	57	6	6	..
Stratford	..	34	26	2	2	..
Toronto	117	640	90	22	18	..
Windsor	..	295	5	..	..	..
Woodstock	..	3	65	3	..	..
Towns.						
Almonte	..	66	66	5	..	..
Arnprior	..	18	18	..	..	..
Aylmer	..	13	9	..	..	..
Barrie	..	11	2	..	..	..
Berlin	3	7	7	..	..	..
Bowmanville	6	26	23	1	1	26
Brockville	..	..	15	1	..	..
Carleton Place	..	18	3	..	..	..
Cobourg	..	..	7	7	7	..
Cornwall	..	7	7	..	..	..
Dundas	..	..	25	1	1	..
Dunnville	..	3	3	1	1	..
Durham	..	6	..	..	..	..
Forest	1	3	1	1	1	1
Galt	..	3	3	..	..	..
Hespeler	..	13	7	..	..	..
Huntsville	..	3	3	1	1	..
Ingersoll	..	4	3	..	..	..
Lindsay	..	44	44	3	1	..
Listowel	..	15	1	..	..	1
Milton	..	3	1	1	1	..
Mitchell	..	8	8	2	..	..
Newmarket	..	10	10	..	..	..
Perth	1	15	4	1	..	..
Petrolea	2	..	5	..	..	..
Port Arthur	..	..	14	..	..	..
Towns.—*Con.*						
Port Hope	..	20	20	..	..	..
Prescott	..	..	7	1	1	..
Preston	..	..	4	..	..	4
St. Mary's	..	8	8	..	..	..
Seaforth	2	..	..	..	..	..
Simcoe	..	8	7	1	1	..
Thorold	..	10	8	..	..	..
Trenton	..	10	10	..	..	..
Wallaceburg	16	4	5	1	..	..
Wiarton	2	2	12	..	..	..
Villages.						
Acton	..	1	1	..	..	..
Ailsa Craig	..	2	2	..	..	..
Ayr	..	9	9	1	1	..
Bayfield	..	6	28	..	..	..
Blyth	..	30	30	..	..	..
Burlington	..	15	15	..	..	..
Bradford	1	1	15	..	..	1
Brighton	..	2	2	..	..	..
Caledonia	..	18	18	..	..	..
Campbellford	..	9	16	4	4	..
Cayuga	..	2	2	..	..	..
Colborne	..	10	..	..	..	..
Delhi	..	5	5	..	..	..
Dundalk	..	4	..	..	..	..
Exeter	6	8	5	..	..	1
Fergus	..	1	1	..	..	..
Georgetown	..	4	..	..	..	..
Glencoe	..	1	..	..	..	..
Marmora	..	1	1	..	..	..
Point Edward	..	3	3	..	..	..
Port Colborne	..	3	..	..	..	..
Port Dover	..	1	1	..	..	..
Shelburne	..	1	..	..	..	..
Tara	..	6	..	..	..	..
Weston	..	15	2	..	..	..
Totals	179	2,022	1,379	152	71	195

Table N.—Report on Kindergartens.

	No. of Kindergartens.	No. of Teachers.	Directors.	Assistants.	Average Salary Director.	Average Salary Assistant.	No. of Pupils attending.	Average daily attendance.
Cities:					$	$		
Brantford	5	11	5	6	310	206	523	224
Chatham	3	8	3	5	392	240	329	138
Guelph	1	2	1	1	350	150	113	37
Hamilton	14	18	14	4	396	234	1,363	486
Kingston	4	4	4	.....	325	.....	190	128
London	15	30	15	15	425	272	1,145	452
Ottawa	15	27	16	11	415	250	1,199	487
Peterborough	3	7	3	4	428	137	266	102
Stratford	3	5	3	2	383	200	416	127
Toronto	46	118	46	72	464	306	5,157	1,887
Towns:								
Aylmer	1	2	1	1	300	150	45	33
Berlin	5	5	5	.....	370	.....	248	184
Cobourg	1	2	1	1	350	100	85	30
Dundas	1	1	1	.....	400	.....	86	51
Galt	1	1	1	.....	450	.....	43	40
Hespeler	1	1	1	.....	325	.....	66	48
Ingersoll	1	1	1	.....	300	.....	82	25
Listowel	1	1	1	.....	325	.....	82	30
Owen Sound	3	3	3	.....	308	.....	339	142
Picton	1	1	1	.....	300	.....	82	31
Preston	1	1	1	.....	325	.....	45	38
Simcoe	1	1	1	.....	350	.....	101	30
Tillsonburg	1	1	1	.....	300	.....	82	31
Toronto Junction	3	6	3	3	392	217	259	101
Waterloo	1	2	1	1	375	300	69	50
Welland	1	1	1	.....	250	.....	65	23
Totals	133	260	134	126	410	274	12,480	4,955

Table O.—Report on Night Schools.

Municipality.	No. of Night Schools.	Teachers.	Pupils attending.	Average daily attendance.
St. Catharines	1	2	32	4
Toronto	9	15	588	282
Totals	10	17	620	286

Table P.—General Statistical Abstract.

A General Statistical Abstract, exhibiting the comparative state and progress of Education in Ontario, as connected with Public, Separate and High Schools (including Collegiate Institutes), also Normal College and Normal and Model Schools, from the year 1867 to 1905, compiled from Returns in the Education Department.

No.	Subjects compared.	1867.	1872.	1877.	1882.	1887.	1892.	1897.	1902.	1904.	1905.
1	Population	.....	1,620,851	.....	1,926,922	.....	2,114,321	.....	2,167,938	.....	.....
2	School population between the ages of five and sixteen years, up to 1884 (and five to twenty-one subsequently)	447,726	495,756	494,804	483,817	611,212	595,238	590,055	581,512	576,537	578,032
3	High Schools (including Collegiate Institutes)	102	104	101	104	112	128	130	134	138	140
4	Normal College and Normal and Model Schools	3	3	4	6	6	6	7	8	8	8
5	Total Public Schools in operation	4,261	4,490	4,965	5,013	5,277	5,577	5,574	5,671	5,758	5,793
6	Total Roman Catholic Separate Schools	161	171	185	190	229	312	340	391	419	428
7	Grand total of all schools in operation	4,527	4,768	5,248	5,313	5,621	6,023	6,051	6,201	6,328	6,369
8	Total pupils attending High Schools (including Collegiate Institutes)	5,696	7,968	9,229	12,348	17,159	22,837	21,390	24,472	27,709	28,661
9	Total students and pupils attending Normal College, Normal and Model Schools	800	800	900	1,059	1,204	1,270	1,492	1,709	1,452	1,499
10	Total pupils attending Public Schools	382,719	433,246	465,908	445,364	462,839	448,204	441,157	420,094	409,537	410,270
11	Total pupils attending Roman Catholic Separate Schools	18,924	21,406	24,952	26,148	30,373	37,466	41,620	45,964	47,807	49,524
12	Grand total, students and pupils attending High, Public, Separate Schools, Normal College, and Normal and Model Schools	408,139	463,430	500,989	484,919	511,875	509,777	508,659	492,239	486,505	489,754
13	Total amount paid for the salaries of Public and Separate School Teachers	$1,093,516	1,371,594	2,038,099	2,144,448	2,458,540	2,752,628	2,886,061	3,198,132	3,473,710	3,669,230
14	Total amount paid for the erection and repairs of Public and Separate School houses, and for libraries, apparatus, books, fuel, stationery, etc	$379,672	835,770	1,035,390	882,526	1,283,565	1,301,289	1,329,609	1,627,028	1,985,783	2,492,006
15	Grand total paid for Public and Separate School Teachers' salaries, the erection and repairs to School houses, and for libraries, apparatus, etc	$1,473,188	2,207,364	3,073,489	3,026,974	3,742,105	4,053,917	4,215,670	4,825,160	5,459,493	6,161,236
16	Total amount paid for High School (and Collegiate Institute) Teachers' salaries	$94,820	141,812	211,607	253,864	327,452	470,828	532,837	647,402	620,710	666,547
17	Total amount paid for erection and repair of High School (and Collegiate Institute) houses, maps, apparatus, prizes, fuel, books, etc	$19,190	31,360	51,417	89,857	168,160	215,871	183,139	222,278	256,377	337,951
18	Grand total paid for educational purposes as above	$1,587,198	2,380,536	3,336,513	3,370,695	4,237,717	4,740,616	4,931,646	5,594,840	6,336,580	7,165,734
19	Total Public and Separate School Teachers	4,890	5,476	6,168	6,857	7,594	8,180	9,128	9,631	9,828	9,926
20	Total Male Teachers	2,849	2,626	3,020	3,062	2,718	2,770	2,784	2,311	2,094	1,967
21	Total Female Teachers	2,041	2,850	3,148	3,795	4,876	5,710	6,344	7,320	7,734	7,959

APPENDIX B.—*TEACHERS' INSTITUTES.*

FINANCIAL STATEMENT, 1905.

Name of Institute.	Number of Institutes.	Number of Members.	Receipts.					Expenditure.				
			Government Grant.	Municipal Grant.	Members' Fees.	Balances and other sources.	Total Receipts.	Printing, postage, etc.	Libraries, Educational Journals, etc.	Miscellaneous.	Total Expenditure.	Balances.
			$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1 Algoma	1	123	25 00	.....	.....	39 43	64 13	8 98	12 85	24 60	46 43	18 00
2 Brant	1	136	25 00	25 00	.....	144 37	194 37	12 70	53 43	33 20	99 33	95 04
3 Bruce E.	1	122	25 00	25 00	.....	31 75	81 75	6 56	35 15	21 17	62 88	18 87
4 Bruce W.	1	101	25 00	25 00	25 25	228 80	304 05	11 65	38 25	84 80	134 70	169 35
5 Carleton	1	152	25 00	25 00	.....	156 61	206 61	21 75	.....	146 00	167 75	38 86
6 Dufferin	1	64	25 00	25 00	16 15	28 22	94 37	17 97	28 50	43 95	90 42	3 95
7 Dundas	1	87	25 00	25 00	20 25	157 11	227 36	9 26	.....	175 21	184 47	42 89
8 Durham	1	120	25 00	25 00	.....	32 85	82 85	6 75	.....	39 05	45 80	37 05
9 Elgin	1	140	25 00	25 00	.....	202 40	252 40	2 50	.....	34 00	36 50	215 90
10 Essex, North	1	48	25 00	50 00	.....	38 13	113 13	8 32	.....	22 00	30 32	82 81
11 Essex, South	1	123	25 00	50 00	.....	131 13	206 13	83 15	.....	25 00	108 15	97 98
12 Frontenac	1	155	25 00	25 00	.....	50 94	100 94	6 43	.....	39 80	46 23	54 71
13 Glengarry	1	95	25 00	25 00	.....	20 41	70 41	29 20	.....	6 65	35 85	34 56
14 Grenville	1	105	25 00	25 00	.....	66 53	116 53	3 41	.....	41 50	44 91	71 62
15 Grey, East	1	40	25 00	25 00	.....	39 53	89 53	.....	.....	46 50	46 50	43 03
16 Grey, South	1	61	25 00	25 00	15 25	221 63	286 88	23 20	71 74	29 04	123 98	162 90
17 Grey, West	1	80	25 00	25 00	.....	117 14	167 14	21 70	.....	37 40	59 10	108 04
18 Haliburton	1	29	25 00	25 00	.....	22 14	72 14	5 00	.....	8 00	13 00	59 14
19 Haldimand	1	116	25 00	25 00	.....	258 19	308 19	9 83	.....	77 25	87 08	221 11
20 Halton	1	90	25 00	25 00	.....	65 25	115 25	6 75	16 50	16 00	39 25	76 00
21 Hastings, North	1	125	25 00	50 00	.....	54 98	129 98	20 58	11 25	55 00	86 83	43 15
22 Hastings, South	1	138	25 00	25 00	.....	191 98	241 98	11 50	.....	57 00	68 50	173 48
23 Huron, West	1	44	25 00	25 00	13 50	101 32	164 82	20 40	.....	46 40	66 80	98 02
24 Huron, East	1	136	25 00	25 00	.....	17 90	67 90	8 25	.....	30 05	38 30	29 60
25 Kent, East	1	80	25 00	25 00	21 00	48 08	119 08	13 25	.....	66 40	79 65	39 43

26 Kent, West	1	140	25 00	25 00	26 75	32 71	109 46	12 99	1 44	41 15	58 58	50 88
27 Lambton, East	1	129	25 00	25 00	23 00	107 42	180 42	32 97	.....	76 80	109 77	70 65
28 Lambton, West	1	125	25 00	25 00	.....	79 31	129 31	5 70	.....	34 15	39 85	89 46
29 Lanark	1	166	25 00	25 00	.....	137 15	187 15	16 15	51 55	10 00	77 70	109 45
30 Leeds (2)	1	90	25 00	25 00	14 25	102 02	166 27	43 55	.....	80 30	123 85	42 42
31 Leeds (1)	1	100	25 00	25 00	12 00	101 82	163 82	18 75	32 50	21 00	72 25	91 57
32 Lennox and Addington	1	130	25 00	25 00	.....	17 96	67 96	15 00	.....	38 10	53 10	14 86
33 Lincoln	1	86	25 00	25 00	.....	113 13	163 13	.....	36 78	12 75	49 53	113 60
34 Manitoulin	1	72	25 00	.....	.....	51 10	76 10	4 75	.....	12 75	17 50	58 60
35 Middlesex, E	1	112	25 00	45 00	22 75	35 49	128 24	52 81	.....	55 15	107 96	20 28
36 Middlesex, W	1	105	25 00	100 00	47 00	124 96	296 96	37 32	.....	147 75	185 07	111 89
37 Muskoka	1	31	25 00	.....	.....	111 00	136 00	8 00	28 25	15 00	51 25	84 75
38 Nipissing	1	29	.....	.....	7 25	29 72	36 97	7 22	18 25	11 50	36 97	.....
39 Norfolk	1	138	25 00	25 00	20 50	37 97	108 47	31 10	4 35	40 00	75 45	33 02
40 Northumberland	1	150	25 00	25 00	.....	147 66	197 66	10 00	.....	62 95	72 95	124 71
41 Ontario, North	1	77	25 00	25 00	38 50	93 26	181 76	8 85	1 00	96 05	105 90	75 86
42 Ontario, South	1	70	25 00	25 00	.....	100 27	150 27	5 62	.....	29 80	35 42	114 85
43 Oxford	1	98	25 00	25 00	24 50	97 75	172 25	6 46	.....	72 05	78 51	93 74
44 Parry Sound, W	1	40	25 00	.....	8 75	22 85	56 60	4 44	16 25	.....	20 69	35 91
45 *Peel	1	96	25 00	25 00	.....	12 51	62 51	7 50	.....	38 90	46 40	16 11
46 Perth	1	190	25 00	25 00	.....	106 72	156 72	15 25	.....	85 00	100 25	56 47
47 Peterborough	1	114	25 00	25 00	.....	32 94	82 94	8 21	.....	23 25	31 49	51 45
48 Prescott and Russell	1	80	25 00	25 00	.....	91 20	141 20		26	31 75	32 01	109 19
49 Prescott and Russell Bilingual	1	75	.....	.....	.....	62 41	62 41	10 50	3 75	.....	14 25	48 16
50 Prince Edward	1	92	25 00	25 00	.....	65 76	115 76	3 75	16 13	30 75	50 63	65 13
51 Rainy River	1	50	25 00	.....	.....	24 05	49 05	5 10	10 50	35	15 95	33 10
52 Renfrew	1	76	25 00	25 00	8 00	9 49	67 49	10 35	.....	56 36	66 71	78
53 Simcoe, East, and West Muskoka	1	122	25 00	25 00	.....	41 51	91 51	4 35	1 75	59 45	65 55	25 96
54 Simcoe, North	1	140	25 00	25 00	18 25	32 75	101 00	10 75	.....	67 55	78 30	22 70
55 Simcoe, South	1	29	25 00	25 00	7 25	114 25	171 50	8 40	34 50	56 00	98 90	72 60
56 Stormont	1	71	25 00	25 00	19 75	67 00	136 75	9 68	.....	126 25	135 93	82
57 Thunder Bay	1	40	25 00	.....	.....	43 65	68 65	5 99	35 68	2 25	43 92	24 73
58 Victoria, E	1	52	25 00	25 00	.....	95 36	145 36	26 00	.....	32 00	58 00	87 36
59 Victoria, W	1	50	25 00	25 00	.....	49 47	99 47	15 00	7 50	32 95	55 15	44 02
60 Waterloo	1	214	25 00	25 00	61 75	67 65	179 40	20 42	.....	106 60	127 02	52 38
61 Welland	1	142	25 00	25 00	.....	111 91	161 91	9 65	.....	126 40	136 05	25 86
62 Wellington, N	1	34	25 00	25 00	8 50	96 26	154 76	8 30	.....	60 34	68 64	86 12
63 Wellington, S	1	125	25 00	25 00	.....	82 12	132 12	7 58	.....	64 00	71 58	60 54
64 Wentworth	1	107	25 00	25 00	.....	52 23	102 23	15 51	2 50	28 25	46 26	55 97
65 York, North	1	110	25 00	25 00	6 50	109 61	166 11	9 98	26 25	32 40	68 63	97 48
66 York, South	1	44	25 00	25 00	11 00	144 32	205 32	65 87	30 00	58 40	154 27	51 05

*Statement for 1904. Government grant paid in 1905.

APPENDIX B.—*TEACHERS' INSTITUTES.—Concluded.*

FINANCIAL STATEMENT, 1905.

Name of Institute.	Number of Institutes.	Number of Members.	Receipts.					Expenditure.				
			Government Grant.	Municipal Grant.	Members' Fees.	Balances and other sources.	Total Receipts.	Printing, postage, etc.	Libraries, Educational Journals, etc.	Miscellaneous.	Total Expenditure.	Balances.
			$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
67 †Ontario Educational Association	1	844	600 00	.....	451 00	559 27	1,610 27	1,023 72	.....	442 65	1,466 37	143 90
Cities and Towns.												
68 Brantford	1	56	25 00	25 00	.....	33	50 33	.....	25 00	.....	25 00	25 33
69 Brockville	1	32	25 00	25 00	8 00	68 71	126 71	9 33	25 13	71 50	105 96	20 75
70 Guelph	1	37	25 00	25 00	.....	36 65	86 65	96	80 47	.....	81 43	5 22
71 Hamilton	1	190	25 00	25 00	46 75	155 23	251 98	20 05	.....	89 00	109 05	142 93
72 Kingston	1	57	25 00	25 00	14 25	41 77	106 02	7 22	24 70	43 75	75 67	30 35
73 London	1	175	25 00	25 00	.....	95 69	145 69	15 05	75	60 25	76 05	69 64
74 London R. C. Separate Schools	1	.....	25 00	.....	.....	.....	25 00	.....	.....	25 00	25 00	.....
75 Ottawa	1	250	25 00	25 00	.....	26 64	76 64	3 61	.....	12 60	16 21	60 43
76 St. Catharines	1	26	25 00	25 00	.....	90 73	140 73	31	39 90	20 00	60 21	80 52
77 St. Thomas	1	42	25 00	25 00	.....	70 29	120 29	5 54	5 00	43 25	53 79	66 50
78 Stratford	1	43	25 00	42 00	43 00	56 38	166 38	38	112 04	23 00	135 42	30 96
79 Toronto	1	680	25 00	25 00	170 00	1,120 91	1,340 91	57 52	114 42	358 00	529 94	810 97
80 Windsor and Walkerville	1	75	25 00	25 00	.....	65 78	115 78	5 17	.....	68 70	73 87	41 91
Totals, 1905	80	8,958	2,525 00	1,937 00	1,230 65	7,911 92	13,604 57	2,118 06	1,054 01	4,443 12	7,615 19	5,989 38
Totals, 1904	79	8,979	2,575 00	2,134 45	1,328 45	7,304 21	13,342 11	1,940 93	1,050 22	4,237 91	7,229 06	6,113 05
Increases	1	.....	.....	.....	.....	607 71	262 46	177 13	3 79	205 21	386 13	.....
Decreases	.....	21	50 00	197 45	97 80	.....	.....	.....	.....	.....	.....	123 67

† Statement for 1905 6.

LIST OF INSPECTORS, DECEMBER, 1906. *Continued.*

Public School Inspectors, December, 1906.	Post Office.	Jurisdiction.	Number of School Rooms (departments) in inspectorate.	Salary of Inspector of 1905.	Expenses.	Total allowance for salary and expenses in 1905.
				$	$	$
L. A. Green, B.A.	Sault Ste. Marie	Algoma District; Towns of Blind River, Bruce Mines, Massey, Sault Ste. Marie, Steelton, Thessalon	109	1,512 00		1,512 00
T. W. Standing, B.A.	Brantford	Brant; Town of Paris	80	1,200 00	195 00	139 50
John McCool, M.A.	Walkerton	Bruce, East; Towns of Walkerton, Wiarton; Villages of Chesley, Tara	122	1,330 00	258 00	1,588 00
W. I. Chisholm, M.A.	Kincardine	Bruce, West; Towns of Kincardine, Southampton; Villages of Lucknow, Paisley, Port Elgin, Teeswater, Tiverton	125	1,346 62	262 50	1,609 12
Thos. Jamieson, B.A.	Ottawa	Carleton; Villages of Hintonburg, Ottawa East, Richmond	152	1,440 00	300 00	1,740 00
Nathaniel Gordon	Orangeville	Dufferin; Town of Orangeville; Villages of Grand Valley, Shelburne	118	1,614 00		1,614 00
Arthur Brown	Morrisburg	Dundas; Villages of Chesterville, Iroquois, Morrisburg, Winchester	107	1,284 00	235 50	1,519 50
W. E. Tilley, M.A., Ph.D	Bowmanville	Durham and S. Monaghan Tp.; Towns of Bowmanville, Port Hope; Villages of Millbrook, Newcastle	140	1,440 00	286 50	1,726 50
elburn Atkin	St. Thomas	Elgin; Town of Aylmer; Villages of Dutton, Port Stanley, Springfield, Vienna	139	1,558 50	238 50	1,797 00
*D. Chenay,	Windsor	Essex, North (No. 1); Town of Sandwich. Village of Belle River	37	507 54	150 00	657 54
D. A. Maxwell, B.A., LL.B., Ph.D	Windsor	Essex, South (No. 2); Towns of Amherstburg, Essex, Kingsville, Leamington	114	1,368 00	247 50	1,615 50
Wm. Spankie, M.D.	Kingston	Frontenac; Villages of Garden Island, Portsmouth	150	1,550 00	300 00	1,850 00
Don'd McDiarmid, M.D.	Maxville	Glengarry; Town of Alexandria; Villages of Lancaster, Maxville	86	1,044 00	204 00	1,248 00
Samuel Huff, B.A.	Meaford	Grey, East: Town of Thornbury	75	1,356 00		1,356 00
H. H. Burgess, B.A.	Owen Sound	Grey, West; Town of Owen Sound; Village of Chatsworth	110	1,317 00	309 00	1,626 00

* Also Inspector of R. C. Bilingual Separate Schools in Essex and Kent.

APPENDIX C.—*INSPECTION OF SCHOOLS.—Continued.*

I.—List of Inspectors, December, 1906.—*Continued.*

Public School Inspectors, December, 1906.	Post Office.	Jurisdiction.	Number of School Rooms (departments) in inspectorate.	Salary of Inspector of 1905.	Expenses.	Total allowance for salary and expenses in 1905.
				$	$	$
N. W. Campbell	Durham	Grey, South; Towns of Durham, Hanover, Meaford, ; Villages of Dundalk, Markdale	123	1,442 00	260 00	1,702 00
Clarke Moses	Caledonia	Haldimand; Town of Dunnville; Villages of Caledonia, Cayuga, Hagersville	101	1,212 00	226 50	1,438 50
Sylvanus Phillips, B.A	Minden	Haliburton, North-East Muskoka, South Nipissing, East Parry Sound; Towns of Huntsville, Powassan	139	1,690 00	84 00	1,774 00
J. S. Deacon	Milton	Halton; Towns of Milton, Oakville; Villages of Acton, Burlington, Georgetown	90	1,079 50	500 00	1,579 50
William Mackintosh	Madoc	Hastings, North; Villages of Bancroft, Madoc, Marmora, Stirling	127	1,440 00	263 23	1,703 23
John Johnston	Belleville	Hastings, South; City of Belleville; Towns of Deseronto, Trenton; Village of Tweed	136	1,759 00	249 00	2,008 00
David Robb, B.A	Brussels	Huron, East; Towns of Clinton, Seaforth, Wingham; Villages of Blyth, Brussels, Wroxeter	123	1,440 00	261 00	1,701 00
J. Elgin Tom	Goderich	Huron, West; Town of Goderich; Villages of Bayfield, Exeter, Hensall	130	1,440 00	269 00	1,709 00
Rev. W. H. G. Colles	Chatham	Kent, East; Towns of Blenheim, Bothwell, Dresden, Ridgetown, Wallaceburg; Village of Thamesville	108	1,092 00	210 00	1,302 00
Robert Park	Chatham	Kent, West; City of Chatham; Village of Tilbury	110	1,588 00	222 00	1,810 00
C. A. Barnes, M.A	Petrolea	Lambton, East; (No. 2); Town of Petrolea; Villages of Alvinston, Arkona, Oil Springs, Watford	129	1,440 00	268 50	1,708 50
D. D. Moshier, B.A., B. Paed	Sarnia	Lambton West (No. 1); Towns of Forest, Sarnia; Villages of Point Edward, Thedford, Wyoming	124	1,540 00	261 00	1,801 00
F. L. Michell, M.A	Perth	Lanark; Towns of Almonte, Carleton Place, Perth, Smith's Falls; Village of Lanark	166	1,660 00	300 00	1,960 00

Wm. Johnston, M.A., LL.B.	Athens	Leeds and Grenville (No. 1); Town of Gananoque; Villages of Newboro; Westport	100	1,200 00	225 00	1,425 00
Robert Kinney, M.D.	Brockville	Leeds and Grenville (No. 2); Village of Athens	91	1,102 00	210 00	1,312 00
T. A. Craig	Kemptville	Leeds and Grenville (No. 3); Town of Prescott; Villages of Cardinal, Kemptville, Merrickville	93	1,090 00	202 50	1,292 50
Frederick Burrows F. C. Anderson, B.A., Assistant	Napanee Napanee	Lennox and Addington; Town of Napanee; Villages of Bath, Newburgh	133	1,425 00	150 00	1,575 00
W. W. Ireland, B.A.	St. Catharines	Lincoln; Town of Niagara; Villages of Beamsville, Grimsby, Merritton, Port Dalhousie	86	1,466 00		1,466 00
John McLaughlin	Gore Bay	Manitoulin Island, etc.; Towns of Gore Bay, Little Current	68	1,500 00		1,500 00
P. J. Thompson, B.A.	London	Middlesex, East; Village of Lucan	112	1,344 00	243 00	1,587 00
H. D. Johnson	Strathroy	Middlesex, West; Towns of Parkhill, Strathroy; Villages of Ailsa Craig, Glencoe, Newbury, Wardsville	106	1,284 00	234 00	1,518 00
J. B. McDougall, B. A	North Bay	Nipissing District, etc.; Towns of Cache Bay, Copper Cliff, Haileybury, Mattawa, New Liskeard, North Bay, Sturgeon Falls, Sudbury	137	1,500 00		1,500 00
H. Frank Cook, B.A.	Simcoe	Norfolk; Town of Simcoe; Villages of Delhi, Port Dover, Port Rowan, Waterford	127	1,440 00	38 40	1,478 40
Albert Odell	Cobourg	Northumberland; Town of Cobourg; Villages of Brighton, Campbellford, Colborne, Hastings	137	1,440 00	282 00	1,722 00
James McBrien	Prince Albert	Ontario, North; Town of Uxbridge; Villages of Beaverton, Cannington, Port Perry	84	1,008 00	300 00	1,308 00
John Waugh, B.A., D. Paed.	Whitby	Ontario, South; Towns of Oshawa, Whitby	87	1,044 00	235 00	1,279 00
William Carlyle	Woodstock	Oxford; City of Woodstock; Towns of Ingersoll, Tillsonburg; Villages of Embro, Norwich	191	1,770 00	324 00	2,094 00
Rev. Geo. Grant, B.A.	Orillia	Parry Sound West, District; Town of Parry Sound; Villages of Burk's Falls, Sundridge	113	1,500 00	300 00	1,800 00
Allan Embury	Brampton	Peel; Town of Brampton; Villages of Bolton, Streetsville	98	1,176 00	222 00	1,398 00
William Irwin, B.A.	Stratford	Perth; Towns of Listowel, Mitchell, St. Mary's; Village of Milverton	138	1,440 00	285 00	1,725 00
J. Coyle Brown and Richard Lees, M.A.	Peterborough	Peterborough; Villages of Havelock, Lakefield, Norwood	116	1,380 00	372 50	1,752 50

APPENDIX C.—*INSPECTION OF SCHOOLS—Continued.*

I.—List of Inspectors, December, 1906—*Continued.*

Public School Inspectors, December, 1906.	Post Office.	Jurisdiction.	Number of School Rooms (departments) in inspectorate.	Salary of Inspector of 1905.	Expenses.	Total allowance for salary and expenses in 1905.
W. J. Summerby	Russell	Prescott and Russell; Towns of Hawkesbury, Vankleek Hill; Villages of Casselman, L'Orignal, Rockland	119	1,438 00	297 00	1,735 00
G. D. Platt, B.A.	Picton	Prince Edward; Town of Picton; Village of Wellington	93	1,116 00	224 00	1,340 00
R. G. Scott, B.A.	Pembroke	Renfrew; Towns of Arnprior, Pembroke, Renfrew; Villages of Cobden, Eganville	190	*2,132 00		2,132 00
G. K. Mills, B.A.	Collingwood	Simcoe, North; Towns of Barrie, Collingwood; Village of Creemore	131	1,440 00	255 00	1,695 00
Rev. Thos. McKee, B.A.	Barrie	Simcoe, Southwest; Towns of Alliston, Stayner; Villages of Beeton, Bradford, Tottenham	127	1,445 00	255 00	1,700 00
Isaac Day, B.A.	Orillia	Simcoe, East, and West Muskoka; Towns of Gravenhurst, Midland, Orillia, Penetanguishene; Village of Port Carling	134	1,574 00	171 75	1,745 75
Alexander McNaughton	Cornwall	Stormont; Town of Cornwall; Vill. of Finch	101	1,212 00	226 50	1,438 50
John Ritchie	Port Arthur	Thunder Bay and Rainy River Districts; Towns of Fort Frances, Fort William, Kenora, Port Arthur, Rainy River	101	1,640 00	36 88	1,676 88
J. H. Knight	Lindsay	Victoria, East; Town of Lindsay; Villages of Bobcaygeon, Omemee	71	866 00	185 87	1,051 87
W. H. Stevens, B.A.	Lindsay	Victoria, West, and Southeast Muskoka; Town of Bracebridge; Villages of Fenelon Falls, Woodville	117	1,623 00	191 64	1,814 64
Thomas Pearce	Berlin	Waterloo No. 1; Towns of Berlin, Hespeler, Preston, Waterloo; Village of Elmira	117	1,404 00	300 00	1,704 00
F. W. Sheppard	Berlin	Waterloo No. 2; Town of Galt; Villages of Ayr, New Hamburg	89	1,080 00	210 00	1,290 00
J. H. Ball, M.A.	Welland	Welland; City of Niagara Falls; Towns of Thorold, Welland; Villages of Bridgeburg, Chippawa, Fort Erie, Port Colborne	145	1,685 00	150 00	1,835 00

Robt. Galbraith, B.A.	Mount Forest	Wellington, North; Towns of Harriston, Mount Forest, Palmerston; Villages of Arthur, Clifford, Drayton	109	1,275 00		1,275 00
J. J. Craig, B.A.	Fergus	Wellington, South; Villages of Elora, Erin, Fergus	87	1,250 00		1,250 00
J. H. Smith	Hamilton	Wentworth; Town of Dundas; Village of Waterdown	106	1,296 00	250 00	1,546 00
C. W. Mulloy, B.A.	Aurora	York, North; Towns of Aurora, Newmarket; Villages of Holland Landing, Richmond Hill, Sutton	110	1,248 00	231 00	1,479 00
David Fotheringham	Toronto	York, South; Towns of East Toronto, North Toronto, Toronto Junction; Villages of Markham, Stouffville, Weston, Woodbridge	127	1,520 00	267 11	1,787 11
†J. P. Hoag, B.A.	Brantford	City of Brantford	50	1,300 00		1,300 00
Wm. Tytler, B.A.	Guelph	do Guelph	35	500 00		500 00
W. H. Ballard, M.A.	Hamilton	do Hamilton	166	2,200 00		2,200 00
W. G. Kidd	Kingston	do Kingston	52	1,400 00		1,400 00
C. B. Edwards, B.A.	London	do London	128	1,735 00		1,735 00
John C. Glashan, LL.D.	Ottawa	do Ottawa	114	2,400 00		2,400 00
Duncan Walker, B.A.	Peterborough	do Peterborough	38	1,500 00		1,500 00
D. C. Hetherington	St. Catharines	do St. Catharines	25	1,200 00		1,200 00
†S. Silcox, B.A., D. Paed.	St. Thomas	do St. Thomas	41	1,350 00		1,350 00
†J. Russell Stuart	Stratford	do Stratford	35	1,200 00		1,200 00
James L. Hughes	Toronto	Chief Inspector, City of Toronto	588	3,500 00		3,500 00
W. F. Chapman	Toronto	City of Toronto		2,500 00		2,500 00
Robt. Meade, M.A.	Windsor	City of Windsor and Town of Walkerville	49	1,200 00		1,200 00
John Connolly	Brockville	Town of Brockville	24	1,000 00		1,000 00
		Totals, *Public School Inspectors*		111,028 16	13,235 88	124,264 04

* Expenses included.

† Also Principal of County Model School.

APPENDIX C.—*INSPECTION OF SCHOOLS.—Concluded.*

LIST OF INSPECTORS, DECEMBER, 1906.—*Concluded.*

Other Inspectors, December, 1906.	Post Office.	Number of School Rooms (departments) in Inspectorate.	Salary of Inspector of 1905.	Travelling expenses paid, 1905.	Total allowance for salary and expenses, 1905.
Separate School Inspectors:			$	$	$
Wm. Prendergast, B.A.	Toronto	269	1,700 00	400 00	2,100 00
Michael O'Brien	Peterborough	203	1,700 00	519 75	2,219 75
John F. Power, M.A.	London	258	1,700 00	522 80	2,222 80
Inspector of Bilingual Separate Schools:					
Telesphore Rochon, B.A. (East)	Clarence Creek	169	1,700 00	446 85	2,146 85
*D. Chenay (West)	Windsor	49	500 00		500 00
Inspector of Technical Education:					
Albert H. Leake	Toronto		1,700 00	528 30	2,228 30
County Model School Inspector:					
John J. Tilley	Toronto		1,850 00	400 40	2,250 40
High School Inspectors:					
J. E. Wetherell, B.A.	Toronto		2,750 00	560 30	3,310 30
H. B. Spotton, M.A.	Toronto		2,750 00	447 04	3,197 04
Totals			16,350 00	3,825 44	20,175 44
Totals, Public School Inspectors			111,028 16	13,235 88	124,264 04
Totals, all Inspectors			127,378 16	17,061 32	144,439 48

* Also Inspector of Public Schools, Essex North.

II. DIPLOMAS FOR SCHOOL PREMISES, 1906.

Name of Inspector.	Jurisdiction.	No. of schools reported as receiving diplomas in 1906.	Name of Inspector.	Jurisdiction.	No. of schools reported as receiving diplomas, 1906.
L. A. Green	Algoma	8	D. D. Moshier	Lambton, W.	18
T. W. Standing	Brant	11	P. J. Thompson	Middlesex, E.	40
R. H. Cowley	Carleton	2	H. D. Johnson	Middlesex, W.	9
S. Huff	Grey, E.	4	H. Frank Cook	Norfolk	2
J. S. Deacon	Halton	18	A. Odell	Northumberland	4
D. Robb	Huron, E.	27	T. Pearce	Waterloo, No. 1	12
J. Elgin Tom	Huron, W.	7	F. W. Sheppard	Waterloo, No. 2	13
Robt. Park	Kent, W.	51	J. H. Smith	Wentworth.	27
W. H. G. Colles	Kent, E.	5	T. Rochon	R. C. Bilingual Separate Schools	24
F. L. Michell	Lanark	2			

APPENDIX D.—*RURAL PUBLIC SCHOOL LIBRARIES, 1905-6.*

Every rural school board that has established a Library under the conditions of the regulations receives a grant, equivalent to half the amount expended for the year, but not exceeding $10.

Inspectorate.	Name of school (section number and township) and amount expended for books recommended, dur- the academic year.	Total amount expended during the year for books recommended.	Total Government grant.	No. of public school libraries in inspectorate.	No. of libraries established during year.
		$ c.	$ c.		
Brant	1A Brantford $ 9 90				
	3 " 36 50				
	5 " 20 00				
	20 " 13 00				
	11 Burford 19 00				
	15 " 27 58				
	21 " 20 00				
	22 Brantford 20 02				
	2 Onondago 20 93				
	5 " 20 00				
	12 South Dumfries 20 55	227 48	100 95	32	7
Bruce, E.	14 Carrick 11 35				
	10 Amabel 10 00	21 35	10 67	4	2
Bruce, W.	15 Bruce 43 00				
	4 Culross 5 00				
	9 " 10 00				
	1 Greenock 20 00				
	1 Huron 11 57				
	12 " 10 00				
	15 " 14 75				
	5 Kincardine 10 00				
	2 Saugeen 20 00				
	4 " 10 00				
	5 " 30 00	184 32	75 65	30	2
Carleton	8 Fitzroy 11 20				
	9 Gloucester 24 80				
	13 " 10 00				
	25 " 5 00				
	4 Goulburn 20 00				
	12 " 13 10				
	3 North Gower 30 00				
	9 " 20 00				
	4 " 20 92				
	1 March 10 00				
	1 Marlborough 10 00				
	6 " 20 00				
	16 " 10 00				
	17 " 10 00				
	2 Nepean 3 00				
	3 " 19 85				
	3 Osgoode 12 00				
	12 " 10 00				
	14 " 10 00				
	15 " 20 00				
	24 " 10 00				
	1 Torbolton 12 00				
	3 " 10 00	321 87	153 07	42	9
Dufferin	7 Amaranth 12 00				
	20 " 18 00				

APPENDIX D.—*Continued.*

Inspectorate.	Name of school (section number and township) and amount expended for books recommended, during the academic year.	Total amount expended during the year for books recommended.	Total Government grant.	No. of public school libraries in inspectorate.	No. of libraries established during year.
		$ c.	$ c.		
Dufferin.—*Con.*	2 Melancthon $15 00				
	6 " 20 00	65 00	32 50	20	4
Dundas	1 Williamsburg 20 00				
	3 " 20 00				
	5 " 20 00				
	10 " 20 00				
	14 " 10 00				
	22 " 20 00				
	12 Matilda 22 00				
	13 " 20 00				
	19 " 20 00				
	23 " 20 00				
	10 Mountain 20 00				
	15 and 17 Mountain 20 00				
	22 Mountain 18 28				
	4 Winchester 22 84				
	7 " 25 25				
	11 " 10 16				
	16 " 20 00				
	18 " 20 00	348 53	169 22	31	15
Durham	10 Clarke 36 68				
	3 Darlington 13 00				
	17 " 6 00				
	18 " 10 00				
	7 Cartwright 22 00				
	4 Manvers 11 55	99 23	40 27	10	3
Elgin	1 Aldborough 7 25				
	2 " 20 00				
	3 " 26 00				
	6 " 20 00				
	10 " 6 25				
	11 " 15 00				
	5 " 5 50				
	3 Bayham 1 15				
	8 " 85				
	9 " 1 25				
	17 " 20 00				
	18 " 7 59				
	5 Dunwich 24 00				
	9 " 2 20				
	15 " 3 83				
	1 Malahide 1 85				
	3 " 30				
	6 " 20 00				
	7 " 3 00				
	13 " 10 00				
	15 " 20 00				
	16 " 1 85				
	21 " 3 02				
	5 S. Dorchester 50				
	6 " 5 00				
	7 " 3 12				
	10 " 4 37				
	11 " 7 00				

APPENDIX D.—*Continued.*

Inspectorate.	Name of school (section number and township) and amount expended for books recommended, during the academic year.	Total amount expended during the year for books recommended.	Total Government grant.	No. of public school libraries in inspectorate.	No. of libraries established during year.
		$ c.	$ c.		
Elgin.—*Con.*	1 Southwold ..... $ 3 00				
	2 " 4 25				
	3 " 20 00				
	6 " 1 00				
	7 " 79				
	10 " 5 00				
	11 " 10 58				
	12 " 3 50				
	13 " 4 25				
	14 " 2 50				
	17 " 5 69				
	19 " 5 00				
	21 " 5 00				
	2 Yarmouth 85				
	3 " 15 60				
	7 " 16 42				
	9 " 5 29				
	13 " 15 60				
	14 " 40				
	17 " 22 50				
	18 " 8 57				
	19 " 3 60				
	22 " 20 00				
	23 " 5 00	424 67	206 10	104	
Essex, N.	3 Maidstone 36 12				
	6 Sandwich, S. 19 67	55 79	20 00	3	1
Essex, S.	7 Gosfield, N. 10 60				
	5 " S. 6 50				
	3 " " 20 50				
	7 Mersea 20 00				
	4 " 20 00				
	2 " 11 02	88 62	44 06	7	3
Frontenac	6 Loughborough 20 00				
	13 " 20 00				
	1 Olden 15 00				
	3 Oso 20 00				
	7 Pittsburgh 20 00				
	8 " 20 00				
	6 Portland 20 00				
	7 " 20 00				
	3 Wolfe Island 20 00	175 00	87 50	83	8
Glengarry	3 Kenyon 8 75				
	3 Lochiel, E. 20 00	28 75	14 37	6	2
Grey, E.	.....	.....	.....	3	.....
Grey, W.	1 Derby 20 00				
	U. 7 Derby and Keppel 17 00				
	U. 2 Derby and Sydenham 20 00				
	12 Holland 20 75				
	U. 7 Holland and Elderslie 31 71				
	U. 2 Holland and Sullivan 21 25				
	11 Holland and Sydenham 17 40				

APPENDIX D.—*Continued.*

Inspectorate.	Name of school (section number and township) and amount expended for books recommended, during the academic year.	Total amount expended during the year for books recommended.	Total Government grant.	No. of public school libraries in inspectorate.	No. of libraries established during year.
		$ c.	$ c.		
Grey, W.—*Con.*	4 Keppel $10 15				
	7 " 20 85				
	8 " 27 00				
	12 " 15 00				
	2 " and Sarawak..... 16 00				
	3 Sarawak 11 24				
	2 Sullivan 15 00				
	9 " 20 00				
	16 Sydenham 10 00	293 35	135 90	23	15
Grey, S.....	11 Bentinck 20 18				
	6 Egremont..... 20 80				
	7 " 5 45				
	10 " 10 00				
	U. 15 Egremont and Arthur 20 30				
	5 Egremont..... 10 00				
	1 Normanby 10 50				
	4 " 20 47				
	5 " 8 41				
	3 Proton..... 20 40	146 51	72 17	19	4
Haldimand	3 Cayuga, S..... 8 00				
	5 Dunn 10 00				
	11 Walpole 21 64	39 64	19 00	11	1
Haliburton, etc..	4 Dysart..... 25 00				
	2 Laurier 8 25				
	1 Lutterworth 12 40				
	2 " 11 00				
	5 Machar 20 00				
	3 Minden..... 17 60				
	3 Nipissing 28 00				
	1 Snowdon 17 00				
	2 Stanhope 30 00				
	2 Stisted 33 00	202 25	83 12	30	6
Halton	3 Esquesing..... 20 95				
	10 " 20 00				
	11 " 20 00				
	14 " 30 00				
	7 Nassagaweya 24 00				
	8 " 30 00				
	4 Nelson..... 8 81				
	8 " 32 00				
	7 Trafalgar 20 00				
	12 " 5 00	210 76	86 90	18	7
Hastings, N.....	1 Dungannon 10 09				
	4 " 12 00				
	7 " 20 00				
	1 Elzevir 32 15				
	3 " 20 00				
	4 " 15 00				
	6 " 12 40				
	6 Faraday 22 05				
	19 Madoc 35 05				
	1 Marmora 11 64				

APPENDIX D.—*Continued.*

Inspectorate.	Name of school (section number and township) and amount expended for books recommended, during the academic year.		Total amount expended during the year for books recommended.	Total Government grant.	No. of public school libraries in inspectorate.	No. of libraries established during year.
Hastings, N. — *Con.*			$ c.	$ c.		
	2 Marmora	$25 00				
	6 "	24 00				
	3 Monteagle	20 57				
	6 "	12 05				
	1 Wollaston	9 81				
	6 "	21 71				
	3 Rawdon	11 00				
	5 "	21 07				
	7 "	9 77				
	13 "	18 90				
	12 Huntington	22 50	386 76	171 31	60	14
Hastings, S.	1 Hungerford	20 00				
	13 Sydney	20 00				
	11 Tyendinaga	25 05	65 05	30 00	3	2
Huron, E.	4 Grey	10 60				
	5 "	17 00				
	11 "	28 40				
	3 Hullett	21 30				
	5 Morris	12 50				
	9 Tuckersmith	10 00				
	2 Turnberry	10 00	109 80	50 05	26	1
Huron, W.	4 Ashfield and Huron	20 00				
	3 Colborne	20 00				
	11 Goderich	21 30				
	6 Stanley	10 66				
	14 "	20 00				
	6 Usborne	20 00				
	5 "	10 00	121 96	60 33	20	3
Kent, E.	1 Camden	20 00				
	4 "	20 00				
	5 "	20 00				
	2 Harwich	40 00				
	3 "	20 00				
	7 "	12 00				
	11 "	30 00				
	12 "	5 00				
	16 "	20 00				
	3 Howard	20 00				
	8 "	20 00				
	14 "	7 00				
	2 Orford	40 00				
	4 Zone	10 00	284 00	117 00	36	3
Kent, W.	1 Chatham	20 00				
	4 "	20 00				
	6 N. "	14 00				
	6 S. "	18 00				
	8 "	20 00				
	9 "	13 20				
	4 N. Raleigh	3 65				
	14 "	6 00				
	3 U. "	25 00				
	7 "	25 00	164 85	77 43	52	3

APPENDIX D.—*Continued.*

Inspectorate.	Name of school (section number and township) and amount expended for books recommended during the academic year.	Total amount expended during the year for books recommended.	Total Government grant.	No. of public school libraries in inspectorate.	No. of libraries established during year.
		$ c.	$ c.		
Lambton, W....	8 Bosanquet $20 10				
	9 " 10 60				
	13 " 5 00				
	7 Moore 4 90				
	7 Plymton 10 50				
	11 " 20 00				
	20 " 18 00				
	10 Sombra 13 00	102 10	51 00	12	4
Lambton, E.....	13 Dawn 11 85				
	4 Euphemia 17 76				
	12 Warwick 16 99	46 60	23 30	38	1
Lanark	4 Bathurst 10 00				
	5 " 10 00				
	12 " 12 00				
	1 Beckwith 14 00				
	4 " 15 00				
	5 " 10 00				
	5 N. " 20 58				
	8 " 20 00				
	2 Dalhousie 10 00				
	11 Drummond 10 00				
	18 " 10 00				
	5 Lavant 12 00				
	8 Montague 8 00				
	9 Ramsay 20 00				
	10 " 20 00				
	15 " 20 00	221 58	110 50	22	6
Leeds and Grenville, No. 1 ...	6 S. Elmsley 10 00	10 00	5 00	5	1
Leeds and Grenville, No. 2 ...	21 Elizabethtown 20 00				
	27 " 21 56				
	11 Kitley 20 00				
	15 " 10 00				
	8 Wolford 10 00	81 56	40 00	21	2
Leeds and Grenville, No. 3 ...	.....	.....	.....	10	.....
Lennox and Addington	4 Camden 20 00				
	5 Ernesttown 12 50	32 50	16 25	14	2
Lincoln	2 Gainsborough 20 00				
	3 " 20 00				
	5 " 20 00				
	8 " 20 00				
	3 Grantham 20 00				
	5 " 20 00				
	6 " 20 00				
	8 " 20 00				
	1 Clinton 20 00				
	4 " 20 00				
	1 " and 2 Louth 20 00				
	5 " and 7 Gainsboro 20 00				
	2 Louth 50 00				
	6 " 20 00				

APPENDIX D.—*Continued.*

Inspectorate.	Name of school (section number and township) and amount expended for books recommended during the academic year.		Total amount expended during the year for books recommended.	Total Government grant.	No. of public school libraries in inspectorate.	No. of libraries established during year.
			$ c.	$ c.		
Lincoln.—*Con...*	7 Louth	22 00				
	3 " and 2 Clinton	20 00				
	4 " and 3 "	45 59				
	8 " and 2 Grantham	20 00				
	5 Niagara	20 00				
	6 "	20 00				
	*6 "	20 00				
	8 "	20 00				
	9 "	20 00				
	10 "	20 00				
	11 S. Grimsby	20 00				
	12 "	20 00				
	13 N. "	20 00				
	6 " and Clinton	20 00	617 59	280 00	50	5
Middlesex, E ...	4 Delaware	10 00				
	12 Dorchester	4 28				
	17 "	21 30				
	19 and 9 Dorchester & Westminster	20 00				
	1 London	12 30				
	3 and 10 London and Biddulph	19 31				
	21 London	20 00				
	23 "	20 00				
	27 "	20 00				
	1 and 1 London and Dorchester	20 00				
	6 McGillivray	18 02				
	7 "	20 00				
	1 Nissouri W	7 85				
	2 "	5 50				
	3 Westminster	20 00				
	11 "	20 08				
	15 "	20 08				
	18 & 21 Westminster & Dorchester	20 50	299 22	148 64	39	15
Middlesex, W...	U. 2 Adelaide and E. Williams	13 81				
	5 Lobo	10 00				
	8 "	20 00				
	6 East Williams	21 39				
	12 West "	34 00				
	7 East "	9 15				
	11 Ekfrid	10 00				
	U. 17 Mosa	16 28	134 63	59 61	20	4
Norfolk	6 Charlotteville	12 10				
	12 "	11 00				
	14 "	27 40				
	18 "	5 00				
	8 Houghton	5 50				
	10 "	16 16				
	11 "	14 00				
	8 Middleton	15 00				
	17 Townsend	20 00				
	9 N. Walsingham	16 34				
	16 "	10 00				
	2 S. "	12 38				
	E 19 "	11 61				
	12 Windham	3 50	179 99	86 29	35	7

* For 1904-5.

APPPENDIX D.—*Continued.*

Inspectorate.	Name of school (section number and township) and amount expended for books recommended during the academic year.	Total amount expended during the year for books recommended.	Total Government grant.	No. of public school libraries in inspectorate.	No. of libraries established during year.
		$ c.	$ c.		
Northumberland	19 Brighton 30 00				
	18 Haldimand 30 00				
	20 " 20 00				
	7 Hamilton 20 00				
	10 " 22 50	122 50	50 00	16	3
Ontario, N.....	9 Brock 20 00				
	2 " 20 00				
	12 " 20 00				
	13 " 20 00				
	6 Mara 10 00				
	3 " 20 00				
	7 " 20 00				
	8 " 20 00				
	6 Scott 20 00				
	7 " 20 00				
	1 Thorah 10 00				
	5 " 20 00				
	9 Uxbridge 20 00	240 00	120 00	61	0
Ontario, S.....	9 Pickering 19 80				
	15 Reach 10 19				
	1 Whitby 20 00	49 99	25 00	21	2
Oxford	7 Blenheim 20 00				
	U. 4 Blandford 41 00				
	6 Dereham 20 00				
	3 East Zorra 20 40				
	6 " 30 00				
	8 " 20 61	152 01	60 00	16	3
Parry Sound, W.	8 Carling 6 00				
	1 Croft 15 77				
	U. 1 Ferrie 11 04				
	2 Hagerman 20 00				
	5 " 15 00				
	1 Humphrey 20 00				
	U. 4 " 10 00				
	U. 2 McDougall 20 00	117 81	58 90	25	7
Peel.....	5 Caledon..... 23 75				
	10 " 35 00				
	5 Toronto..... 21 76				
	*5 " 24 00	104 51	40 00	20	2
Perth.....	13 Blanshard..... 20 00				
	6 Downie 20 00				
	7 " 20 00				
	8 " 20 66				
	5 North Easthope..... 20 00				
	7 " " 20 00				
	4 Ellice..... 20 00				
	10 " 20 00				
	5 Elma 33 82				
	9 " 30 00				
	5 Fullarton 5 53				

* For 1903-04.

APPENDIX D.—*Continued.*

Inspectorate.	Name of school (section number and township) and amount expended for books recommended during the academic year.		Total amount expended during the year for books recommended.	Total Government grant.	No. of public school libraries in inspectorate.	No. of libraries established during year.
		$ c.	$ c.	$ c.		
Perth—*Co*	U. 5 Fullarton	20 00				
	9 Logan	20 00				
	1 Mornington	20 00				
	2 "	30 00				
	4 "	21 27				
	1 Wallace	20 45				
	3 "	10 74				
	4 "	13 12				
	6 "	8 06	393 65	178 73	60	10
Peterboro'	4 Harvey	20 00				
	1 Otonabee	10 00				
	7 Smith	10 00	40 00	20 00	7	2
Prescott and Russell	1 Alfred	2 00				
	4 Caledonia	20 35				
	8 "	10 00				
	15 Clarence	19 97				
	2 Cumberland	1 50				
	3 "	20 00				
	4 "	20 00				
	5 "	19 00				
	4 E. Longueuil	20 00				
	1 N. Plantagenet	15 15				
	14 "	6 84				
	1 South Plantagenet	23 15	177 96	87 23	31	5
Prince Edward	1 Athol	20 00				
	3 "	20 00				
	4 "	23 30				
	5 Hallowell	13 58				
	7 "	20 53				
	11 "	20 00				
	3 Hillier	20 00				
	6 "	14 94				
	10 S. Marysburgh	20 00				
	1 Sophiasburgh	14 00				
	2 "	20 00				
	7 "	20 00				
	8 "	20 20				
	12 "	4 00	250 55	123 26	28	5
Rainy River	3 Crozier	5 00				
	2 Devlin	20 00				
	2 Dobie	20 00				
	1 Morley and Patullo	22 00				
	1 Nepigon	20 00	87 00	42 50	7	5
Renfrew	1 Bagot	8 50				
	2 Brudenell	22 00				
	3 Pembroke	10 00				
	4 Ross	16 45				
	7 Stafford	10 25				
	1 Westmeath	20 00				
	2 "	27 10				
	7 "	20 56				
	9 "	19 10				

APPENDIX D.—*Continued.*

Inspectorate.	Name of school (section number and township) and amount expended for books recommended during the academic year.	Total amount expended during the year for books recommended.	Total Government grant.	No. of public school libraries in inspectorate.	No. of libraries established during year.
		$ c.	$ c.		
Renfrew—*Con.*	1 Wilberforce 10 00				
	6 Wilberforce and N. Algona ... 7 75	171 71	81 04	16	6
Simcoe, N	3 Nottawasaga 23 80				
	4 " 17 45				
	9 " 20 00				
	12 " 20 00				
	14 " 15 45				
	U.21&17 " and Collingwood. 19 65				
	U.2 " and Osprey 19 92				
	1 Vespra 12 00				
	7 " 17 00				
	3 " and Oro 10 00				
	5 Flos 20 00				
	10 " 11 24				
	10 Tiny 18 80	225 31	110 75	13	12
Simcoe, E. and W. Muskoka.	2 Flos 33 00				
	4 Oro 37 92				
	16 " 33 60				
	17 " 24 36				
	2 Medora 20 00				
	12 Matchedash 12 00				
	12 Medonte 26 35				
	4 Watt 32 00				
	1 Wood 34 25				
	2 " 23 75				
	3 Tay 28 00				
	17 " 20 00	325 17	116 00	45	8
Stormont.....	2 Cornwall 14 48				
	3 Finch 20 08				
	6 " 53 00				
	4 Osnabruck 10 98				
	15 " 17 60	116 14	41 53	7	3
Victoria W. and S.E. Muskoka.	1 Carden 10 00				
	7 " 8 00				
	2 Fenelon 10 00				
	6 " 10 00				
	13 " 15 56				
	5 Mariposa 8 50				
	6 " 20 60				
	15 " 10 16				
	U. 20 " 10 00				
	8 Macaulay 10 00				
	7 Ryde 10 00				
	1 McLean 15 00	137 82	68 61	23	8
Waterloo, No. 1.	1 Waterloo 20 00				
	6 " 20 00				
	10 " 20 00				
	8 Woolwich 10 00	70 00	35 00	12	2
Waterloo, No. 2.	19 Wellesley 20 46				
	16 " 20 00	40 46	20 00	7	1

APPENDIX D.—*Continued.*

Inspectorate.	Name of school (section number and township) and amount expended for books recommended during the academic year.	Total amount expended during the year for books recommended.	Total Government grant.	No. of public school libraries in inspectorate.	No. of libraries established during year.
		$ c.	$ c.		
Wellington, N..	1 Minto 23 43				
	6 W. Luther..... 18 25				
	18 Maryborough 5 00	46 68	21 63	7	2
Wellington, S...	1 Erin 31 25				
	8 " 20 00				
	12 " 16 85				
	13 " 19 00				
	16 " 12 00				
	6 Garafraxa 20 00				
	8 " 19 60				
	2 Guelph 20 00				
	5 " 6 00				
	1 Puslinch..... 25 00				
	* Macdonald Consolidated School Guelph Tp..... 33 43	223 13	96 72	32	7
Wentworth	14 Ancaster..... 20 00				
	10 " 10 00				
	8 " 10 00				
	3 Barton 15 00				
	5 Beverly 20 00				
	9 " 20 85				
	6 Flamboro E..... 20 00				
	8 Flamboro W..... 16 09				
	9 " 20 37				
	3 Saltfleet 10 50	162 81	80 79	33	1
York, N.....	3 N. Gwillimbury..... 6 50				
	4 E. Gwillimbury..... 10 00				
	2 King 30 21				
	10 " 7 97				
	9 Vaughan 10 00				
	6 " 11 74				
	16 " 13 15	89 57	39 70	31	5
York, S.....	1 Etobicoke 20 26				
	3 " 14 99				
	21 Markham 3 75				
	*2 Markham and Vaughan 20 00				
	2 " " 20 00				
	5 Scarboro' 10 00				
	9 " 15 00				
	7 Vaughan 10 00				
	9 York 10 00				
	22 " 10 00	134 00	66 87	50	.....
R. C. Separate Schools, West.	6 Arthur 21 13				
	2 Ashfield 11 40				
	6 Biddulph 3 96				
	1 Carrick and Culross..... 35 00				
	2 Maidstone 12 48				
	5 Sandwich, S 10 95				
	7 Sandwich, S 11 87				
	5 Sombra 16 00				
	13 Waterloo 15 00				
	11 Wellesley..... 50 00	187 79	70 82	27	7

* For 1904-5.

APPENDIX D.—*Concluded.*

Inspectorate.	Name of school (section number and township) and amount expended for books recommended during the academic year.	Total amount expended during the year for books recommended.	Total Government grant.	No. of public school libraries in inspectorate.	No. of libraries established during year.
		$ c.	$ c.		
R. C. Separate Schools, Central	1 York..... 20 00	20 00	10 00	3	.....
	Totals, 1905-6	9,477 88	4,343 24	1,587	268
	" 1904-5	11,641 85	5,265 80	1,231	458
	Increases	.....	.....	356	.....
	Decreases	2,163 97	922 56	.....	190

Inspectorate.	Name of Principal and Degree; also Assistant when he gives full time to Continuation Class work.	Professional Certificate.	No. of Teachers.	Name of School.	No. of Pupils.	Class of School.				Amount of Government Grant.			
						A	B	C	D	A	B	C	D
		H. S.								$ c.	$ c.	$ c.	$ c.
Algoma	A. W. Readley, B.A.	Prin.	4	Bruce Mines Town	36	1				300 00			
	W. R. Tracey	I	4	Thessalon Town	20		1				150 00		
	A. Cameron	II	2	1 Hallam	4				1				45 00
	H. F. Brackenridge	II	5	Blind River Town	6				1				45 00
Brant	Arthur E. Green	I	4	8 S. Dumfries	25	1				150 00			
	Ida J. Tovell	II	1	12 "	3				1				22 50
	Margery Amy	II	1	14 "	6				1				22 50
	John Hicks	II	2	8 Burford	4				1				22 50
	Charlotte Ballachey	I	1	11 "	3				1				22 50
	A. Winnifred Bale	II	1	24 "	5				1				22 50
	Wm. J. Jolly	I	2	22 Brantford	8				1				22 50
Bruce, E.	W. E. Van Velser	II	3	14 Carrick	3				1				22 50
Bruce, W.	Royden J. Fuller	I	7	Paisley Village	42	1				*275 00			
	W. J. Ferguson	II	..	"	..								
	Donald Ross	I	8	Southampton Town	24	1				150 00			
	M. A. Aldredge	I	5	Teeswater Village	40	1				150 00			
	Bruce F. Howson	I	3	10 Huron	20	1				150 00			
	Jos. Stalker	II	5	Lucknow Village	40		1				75 00		
	Wm. H. Sharp	II	1	10 Kinloss	7			1				37 50	
	Minnie McNaughton	II	1	4 Culross	4				1				22 50
	H. Stan. Sanderson	II	1	5 Greenock	5				1				22 50
	Mary Strathdee	II	1	12 Huron	5				1				22 50
	Katharine McNabb	II	1	14 "	4				1				22 50
	Thos. McElkanney	III	3	Tiverton Village	4				1				22 50
Carleton	Margaret Kingston	I	2	5 Fitzroy	17	1				150 00			
	Lulu Mulloy	I	3	8 "	35	1				150 00			
	Mabel Gurney	I	2	5 Goulburn	12	1				150 00			
	Evelyn Beaman	I	2	7 "	15	1				150 00			
	Marion Whyte	I	4	3 N. Gower	28	1				225 00			
	Laura Whitney	I	..	3 "	..								
	Emma Craig	I	3	6 "	16	1				86 25			
	Lila MacDougall	I	4	1 Nepean	38	1				150 00			

*No special for one-half year on one teacher.

APPENDIX E.—*Continued.*

Inspectorate.	Name of Principal and Degree; also Assistant when he gives full time to Continuation Class work.	Professional Certificate.	No. of Teachers.		Name of School.	No. of Pupils.	Class of School.				Amount of Government Grant.			
							A	B	C	D	A	B	C	D
											$ c.	$ c.	$ c.	$ c.
Carleton.—*Con.*	Maud Norton	I	4	11	Osgoode	40	1				225 00			
	M. E. Norton	I		11	"									
	Ida Norton	I	3	15	"	12	1				93 75			
	Muriel Payne	I	4		Ottawa E. Village	16	1				75 00			
	Jennie Baker	I	3		Richmond Village	26	1				150 00			
	Samuel Acheson	II	2	12	Goulburn	28		1				75 00		
	Sara Hunt, B.A.	III	4	3	Huntley	16		1				75 00		
	Hattie Bartley	II	2	10	Nepean	20		1				37 50		
	Hugh Brownlee, B. A.	III	8		Hintonburgh Village	26		1				75 00		
	Margaret Taylor	II	2	9	Gloucester	10			1				37 50	
	Margaret Muir	II	2	3	Marlborough	8			1				*30 00	
	Lila M. Ellis	II	2	18	Osgoode	7			1				*30 00	
	Ida Wilson	III	1	22	"	3				1				†37 50
Dufferin	A. M. Warner	I	5		Grand Valley Village	22	1				150 00			
	T. E. Langford, M. A.	I	7		Shelburne	47	1				300 00			
	Nellie De Cou, B. A.	I			"									
	W. G. Bain	II	2	2	Melancthon	9			1				37 50	
	Wm. Heath	II	2	17	Mono	8				1				22 50
Dundas	Burton C. Taggart	I	7		Winchester, Village	42	1				150 00			
	Geo. H. Steer	I	4		Chesterville "	32	1				150 00			
	Horatio Loucks	I	4	12	Winchester	37	1				150 00			
	Esther Bates	II	2	22	Mountain	6				1				22 50
Durham	D. Hampton	II	4		Millbrook Village	36	1				150 00			
	Edward Mitchell	II	1	5	Manvers	5			1				37 50	
	Clarence K. Flint	II	2	12	Clarke	3				1				22 50
	Mabel F. Lambe	III	1	5	Cartwright	3				1				22 50
	J. A. Vanderburgh	III	1	6	"	3				1				22 50
	Jean E. Browne	II	2	7	Manvers	3				1				22 50
	Miss Walsh	III	1	9	Cavan	3				1				22 50
	Sarah Taylor	III	1	5	S. Monaghan	3				1				22 50
Elgin	Henry Wing	I	4	5	Aldborough	20	1				150 00			
	Alex. Leitch	I	4	6	"	20	1				150 00			

	J. W. Brown	II	2	9	Southwold	10		1			75 00			
	D. McGregor	II	3	11	S. Dorchester	10		1			75 00			
	R. A. Catherwood	II	2		Port Stanley, Village	10		1			75 00			
	Geo. Stewart	II	3		Springfield "	16		1			75 00			
	Lily Moorehouse	III	1	6	Southwold	6			1				37 50	
	W. A. Fowler	III	1	8	"	5			1				37 50	
	J. C. McLenna	III	1	11	"	7			1				37 50	
	Laura Graham	I	1	5	Dunwich	7			1				37 50	
	Jean Anderson	II	1	8	Aldborough	4				1				22 50
	H. Burwell	III	1	10	Southwold	3				1				22 50
	Mamie Saunders	II	1	18	Yarmouth	3				1				22 50
Essex, N	Nellie Moynahan	II	1	6	Sandwich, S.	13			1				37 50	
Essex, S	Agnes Trout	I	8		Amherstburg, Town	19	1				300 00			
	Ada Beattie	I	..		" "									
	Lizzie Kerr, B.A	I	5	4	Tilbury, W	30	1				300 00			
	—— Job	I	..		"									
	Fred. J. Voaden	I	7		Kingsville Town	11		1			75 00			
	J. H. Madill	II	1	2	Colchester, S	14			1				37 50	
	W. J. Elliott	I	3	9	"	9			1				37 50	
Frontenac	Sarah E. Revelle	II	1	7	Portland	4				1				22 50
	Ella G. Shaw	III	1	1	Storrington	4				1				22 50
	W. E. Shales	III	1	2	"	3				1				22 50
Glengarry	C. H. C. Moyer	I	4		Maxville, Village	25	1				150 00			
	Wm. B. McEwan	II	3	12	Charlottenburg	4				1				22 50
Grey, E	Thomas Gowans	II	4		Thornbury, Town	6			1				37 50	
	Chas. Stewart	III	2	3	Euphrasia	8			1				37 50	
	Olive Matthews	II	2	4	"	3				1				22 50
Grey, S	Thos. Allan	I	9		Durham Town	97	1				450 00			
	L. Maude Forfar, B.A	I	..		" "									
	Flossie McKerracher	I	..		" "									
	Jas. A. Magee	I	8		Hanover "	33	1				150 00			
	Jas. S. Rowe	II	4		Markdale Village	32		1				75 00		
	N. C. Mansell	II	3	5	Artemesia	14		1				75 00		
	Jas. Coleridge	II	1	13	Egremont	5			1				37 50	
	Donald McKenzie	II	2	16	Normanby	6			1				37 50	
	W. C. Leman	II	4		Dundalk Village	15		1				75 00		
	A. D. Carmichael	III	2		U. 12 Artemesia	7				1				22 50
	W. W. Tait	II	3	4	Normanby	5				1				22 50
	J. T. Tolchard	III	1	9	Glenelg	3				1				22 50
Grey, W	A. B. Cooper	I	3		Chatsworth Village	8			1				37 50	
Haldimand	J. M. Roszel	I	4	10	Walpole	28	1				150 00			
	J. L. Mitchener, B.A	I	2	3	"	20		1				75 00		
	Maggie Kenney	II	2	1	"	15			1				37 50	

* For part of year. † $15 for 1904-5.

APPENDIX E.—*Continued.*

Inspectorate.	Name of Principal and Degree; also Assistant when he gives full time to Continuation Class work.	Professional Certificate.	No. of Teachers.		Name of School.	No. of Pupils.	Class of School.				Amount of Government Grant.			
							A	B	C	D	A	B	C	D
											$ c.	$ c.	$ c.	$ c.
Haldimand.—*Con.*	Jennie Hoover	III	1	2	Walpole	3				1				22 50
Haliburton, etc.	A. C. Bernath	I	9		Huntsville Town	20	1				300 00			
	Geo. R. Coombs	II	4		Powassan "	15		1				150 00		
	Geo. W. Dominey	Temp	3	2	Machar	6			1				75 00	
	W. I. Hodges	II	2	6	S. Himsworth	7			1				75 00	
	Margery A. Barker	Dist.	1	1	Monmouth	3				1				22 50
	W. I. Arthurs	II	3	1	Anson	3				1				22 50
Halton	W. F. Inman	I	8		Milton Town	69	1				300 00			
	A. Evelyn Hockey	I			"									
	W. H. Stewart	I	7		Acton Village	32	1				300 00			
	Jessie C. McKinnon	I			" "									
	F. T. Richardson	I	4		Burlington Village	10			1				37 50	
	W. J. McClenahan	II	1	3	Nelson	4				1				22 50
Hastings, N.	Robert Weir	II	4		Marmora Village	10		1				75 00		
	Barbara Fraser	II	1	3	Elzevir	3				1				22 50
Hastings, S.	V. Kenneth Greer	I	6		Tweed Village	28	1				150 00			
	John M. Bell	II	2	11	Sidney	17			1				37 50	
	Geo. A. Barker	I	1	4	"	8			1				37 50	
	Adam Kiernan	II	1	29	Tyendinaga	11			1				37 50	
	A. E. Thrasher	II	1	7	Sidney	4				1				22 50
	Jessie Johnston	III	1	20	Hungerford	7				1				22 50
Huron, E.	I. H. Cameron	I	6		Brussels Village	61	1				300 00			
	H. O. Martin	I			" "									
	A. H. Musgrove	II	9		Wingham Town	97	1				300 00			
	Lena De La Mater	I			" "									
	John Hartley	I	4		Blyth Village	25	1				150 00			
	Wm. P. Dobson	III	2		Wroxeter Village	13			1				37 50	
	Laura A. Shannon	II	2	11	Grey	9			1				37 50	
	Harry D. Ainlay	III	1	5	Morris	6			1				37 50	
	Andrew Scott	II	1	3	Tuckersmith	6			1				37 50	
	Thos. W. Forsyth	II	1	2	"	5				1				22 50
	Thos. G. Shillinglaw	II	1	9	"	4				1				22 50

Huron, W.	Louis C. Fleming	I	8		Exeter Village	98	1					450	00					22 50
	Annie E. Dorrington	I			" "													
	Agnes F. Chidley	I			" "													
	Wm. McKay	II	3		Hensall "	12			1							37	50	
	Thos. H. Brownlee	II	2		Bayfield "	6			1							37	50	
	Minnie J. Durnin	III	1	3	Ashfield	8			1							37	50	
	Fred. Ross	II	1	4	"	6			1							37	50	
	C. A. Tebbutt	II	2	8	"	6			1							37	50	
	Claude Bluett	II	3	5	Stephen	6			1							37	50	
	Mabel A. Baillie	III	1	17	W. Wawanosh	6			1							37	50	
	John C. Stothers	III	1	9	Ashfield	7				1								22 50
	Colin M. Kiel	III	1	15	"	4				1								22 50
	Fanny S. Gray	II	1		U. 1 Ashfield and Colborne	3				1								*37 50
	Edward Stewart	III	1	2	Colborne	5				1								22 50
	E. G. McMillan	III	1	5	"	3				1								22 50
	Sara J. Bell	I	1	2	Goderich	3				1								22 50
	J. W. Hogarth	II	1	3	Hay	5				1								22 50
	Alex. McLeod	II	3	7	"	6				1								22 50
	Jas. Delgaty	II	1	4	Stanley	4				1								22 50
	Geo. W. Shore	II	1	6	"	3				1								22 50
	Geo. S. Howard	II	1	9	"	3				1								22 50
	Wm. H. Johnston	II	1	14	"	5				1								22 50
	Minnie Botterill	II	2	1	Stephen	6				1								22 50
	R. M. McLennan	III	2	16	"	3				1								22 50
	D. McDougall	II	2	6	Usborne	5				1								22 50
	Gordon Wightman	III	1	6	E. Wawanosh	3				1								22 50
Kent, E.	A. A. Merritt	I	8		Blenheim Town	56	1					300	00					
	Helena Dadson, B.A.	II			" "													
	Henry H. Kelly, B.A.	II	4		Bothwell "	51	1					300	00					
	Evelyn Tupling	I			"													
	Clement Milburn	I	4	6	Orford	40	1					300	00					
	Annie A. Robinson	I			"													
	Jas. G. Cameron	II	4		Thamesville Village	40	1					150	00					
	Lydia Broadbent	II	2	4	Harwich	10		1						75	00			
	Clifford Langford	III	1	8	Camden	8			1							37	50	
	Frank Ferguson	III	1	12	Howard	6			1							37	50	
	Jas. C. Black	II	1	2	Orford	10			1							37	50	
	Mamie C. Campbell	III	1	2	Harwich	5			1							37	50	
	Stella Rowe	II	1	7	"	6			1							37	50	
	Edith Stenton	III	1	8	"	6			1							37	50	
	E. Scott Stevenson	II	1	11	"	10			1							37	50	
	Evelyn Von Gunten	III	1	12	"	9			1							37	50	
	Lizzie A. B. Devlin	II	1	3	Zone	5			1							37	50	
	Ross Ellison	III	1	5	"	10			1							37	50	

*$15 for 1904-5.

APPENDIX E.—*Continued.*

Inspectorate.	Name of Principal and Degree; also Assistant when he gives full time to Continuation Class work.	Professional Certificate.	No. of Teachers.	Name of School.	No. of Pupils.	Class of School.				Amount of Government Grant.			
						A	B	C	D	A	B	C	D
										$ c.	$ c.	$ c.	$ c.
Kent. E.—*Con.*	Thos. Bennie	III	1	4 U. Camden	4				1				22 50
	Duncan Johnson	I	1	2 Howard	4				1				22 50
	Morley Wilkinson	III	1	10 "	3				1				22 50
	Sara Gosnell	II	1	11 Howard	4				1				22 50
	W. A. Higgins	II	2	3 and 4 Orford	4				1				22 50
	Annie Shliehauf	III	1	5 "	4				1				22 50
	Geo. R. Smith	I	1	9 "	4				1				22 50
	Ella Zink	II	1	3 Harwich	3				1				22 50
	Jas. D. Samson	III	1	6 "	3				1				22 50
	Lizzie Noack	II	1	13½ "	4				1				22 50
	Lila Gregory	III	1	16 "	3				1				22 50
Kent, W	E. W. Dickenson, B.A	I	10	Wallaceburg, Town	65	1				300 00			
	Queenie Robertson	I	..	" "									
	G. A. Miller	I	8	Dresden, Town	61	1				300 00			
	Kate Brennan	I	..	" "									
	Lizzie Wilson	II	3	Tilbury, Village	9			1				37 50	
	Robert E. Park	III	1	1 Chatham	5			1				37 50	
	Carrie Burns	II	2	9 "	7			1				37 50	
	Gordon McDonald	III	1	5 Raleigh	9			1				37 50	
	Cassie M. Hill	II	1	7 "	7			1				37 50	
	Elma Daniels	III	1	12 "	5			1				37 50	
	E. L. Elliott	II	2	5 U. "	13			1				37 50	
	Kate B. McDonald	II	1	1 Romney	5			1				37 50	
	W. C. Dainty	II	4	4 U. "	9			1				37 50	
	Roger Hutchinson	III	1	3 S. Tilbury, E	7			1				37 50	
	Almeda Howard	II	1	5 E. "	6			1				37 50	
	Margaret Rowe	II	1	6 N. Chatham	4				1				22 50
	Carrie Rowe	II	1	6 S. "	5				1				22 50
	Jessie Hall	II	1	8 "	5				1				22 50
	Minnie McCreary	III	1	17 "	3				1				22 50
	May Ferguson	III	1	18 "	3				1				22 50
	Josephine McCaughrin	II	1	3 Raleigh	3				1				22 50

	Emma M. Shreeve	III	1	4	N. "	3			1					22 50
	Jessie Ferguson	II	1	3	U. "	3			1					22 50
	J. W. Bennie	III	1	2	E. Tilbury, E.	4			1					22 50
	Isabella Robertson	III	1	3	M. "	3			1					22 50
	Violet Lowry	II	1	8	"	4			1					22 50
Lambton, E	F. Tanton	I	6		Alvinston, Village	38	1			300 00				
	Annie Eccles	I			"									
	H. E. Amoss, B.A.	I	7		Oil Springs, Village	38	1			†250 00				
	Margaret Clark	II			" "									
	Benj. Parker	II	3		Arkona Village	10			1				37 50	
Lambton, W	J. D. Williamson	II	3	11	Moore	4			1					22 50
	Fred Flett	III	2	18	Moore	3			1					22 50
	Hattie Dowd	II	1	20	Plympton	3			1					*15 00
Lanark	Robt. Beatty	II	5		Lanark	49	1			150 00				
	Mima A. Ellis	II	4	4	Pakenham	44	1			150 00				
	Minnie Park	III	1	2	Dalhousie	6			1					22 50
	Phenie McLaren	II	1	6	Lanark	5			1					22 50
Leeds and Grenville 1	Jno. Urquhart, B.A	I	4		Westport, Village	16	1			150 00				
	L. Earle	II	2	5	S. Crosby	5			1				37 50	
	A. Morton	II	2		Newboro, Village	3			1					22 50
Leeds & Grenville 2	Geo. E. Scott	II	1	22	Kitley	5			1				37 50	
	Minnie Alford	II	2	7	Elizabethtown	3			1					22 50
	Vina Cauley	II	2	11	Kitley	3			1					22 50
	Kathleen Oliver	II	1	15	"	3			1					22 50
Leeds & Grenville 3	Stanley Wightman	I	5		Merrickville Village	45	1			150 00				
	Geo. Weedmark	II	6		Cardinal "	13		1			75 00			
	Jas. E. Burchell	II	2	15	Edwardsburg	14			1				37 50	
	Wm. J. McLachlan	II	2		U. 1-5 Oxford	4			1					22 50
Lennox & Addington	R. H. Hutchison	I	3		Bath Village	29	1			150 00				
	F. Dryburgh	II	3	13	Ernesttown	9			1					22 50
	L. A. McCaugherty	III	1	7	S. Fredericksburg	3			1					22 50
Lincoln	F. Mittlefehldt	II	1	11	Gainsburgh	3			1					22 50
Middlesex, E	Mark Garrett	III	2	9	and 14 N. Dorchester	4			1					22 50
	Lillian G. Howard	II	1	16	N. "	7			1					22 50
	Alice Duff	II	1	7	Nissouri, W.	7			1					22 50
	Irene Walker	III	1	7	Westminster	4			1					22 50
	Geo. Garrett	III	2	4	N. Dorchester	6			1					22 50
Middlesex, W	W. G. Robinson	II	2		U. 16 Caradoc & Ekfrid	17		1			75 00			
	A. D. Campbell	II	1	10	Lobo	5			1				37 50	
	A. L. McDougall	II	1	8	Caradoc	3			1					22 50
	C. J. Bradley	II	2	15	"	8			1					22 50
	Geo. F. Copeland	II	1	8	Lobo	5			1					22 50
	Julia M. Boyd	II	1	6	E. Williams	3			1					22 50

* For 1904-5. † Special grant for one teacher only.

APPENDIX E.—*Continued.*

Inspectorate.	Name of Principal and Degree; also Assistant when he gives full time to Continuation Class work.	Professional Certificate.	No. of Teachers.			Name of School.	No. of Pupils.	Class of School.				Amount of Government Grant.			
								A	B	C	D	A	B	C	D
												$ c.	$ c.	$ c.	$ c.
Middlesex W.—*Con.*	John McWilliams	II	2			Ailsa Craig Village	6				1				22 50
Manitoulin	Robt. O. White	I	5			Gore Bay Town	37	1				†600 00			
	L. A. Jones	III	2	2		Assiginack	18		1				150 00		
	Geo. Buchanan	II	4			Little Current Town	10			1				75 00	
	Jane Lush	II	1	1		Hilton	5				1				45 00
	S. R. Curtin	III	2	1		St. Joseph	3				1				45 00
Nipissing	J. G. Lowe	I	5			Sudbury Town	19	1				300 00			
	A. W. Smith	I	6			Sturgeon Falls Town	11			1				75 00	
	H. J. Case	I	7			Copper Cliff Town	6				1				45 00
Norfolk	Jas. M. Smith	III	3			Delhi Village	7			1				37 50	
	A. E. Smith	II	2	2		Middleton	6				1				22 50
	Henry Marshall	II	1	5		"	5				1				22 50
	May Reed	II	1	15		N. Walsingham	5				1				22 50
Northumberland	G. B. Stewart	I	4	2		Percy	38	1				150 00			
	C. K. Fotheringham	III	1	16		Cramahe and Brighton	7			1				37 50	
Ontario, N	J. Givens	II	3			Beaverton Village	13		1				75 00		
	R. J. Johnston	II	4			Cannington "	11			1				37 50	
	Wm. Fallowdowne	II	3	12		Brock	10			1				37 50	
	Martha Cameron	II	1	2		Mara	8			1				37 50	
	James Doyle	III	1	4		Brock	5				1				22 50
Ontario, S	E. W. Ball	II	2	15		Pickering	3				1				22 50
	Annie Mooney	II	1	3		"	3				1				22 50
	Wm. Flummerfelt	II	2	4		W. Pickering	4				1				22 50
	J. Hume	I	2	3		Whitby	5				1				22 50
Oxford	W. J. Dunlop	I	4	U.		13 & 3 E. Zorra & S. Easthope	18	1				150 00			
	H. E. Ricker	I	6			Norwich Village	25	1				300 00			
	Daisy E. Taylor	I	..			" "	..								
	Chas. Garthwaite	II	3	6		S. Norwich	17	1				150 00			
	D. A. Norris	II	3	11		Blenheim	13		1				75 00		
	P. H. Hendershott	II	2	3		N. Norwich & E. Oxford	10		1				75 00		
	C. W. Milburn	I	3	U.		21 & 3 Blenheim & B	19		1				75 00		

	John M. Scott	II	3	5	& 1 E. Nissouri & N.O	10		1				75 00				
	H. A. Everts, B.A	I	3	24	Blenheim	10		1				75 00				
	L. H. Woodrow	III	2	10	E. Zorra	6			1					37 50		
	M. B. Hugill	II	2	5	Dereham	7			1					37 50		
	A. W. Kennedy	III	3		Embro Village	5			1					37 50		
	H. C. Branian	II	2	12	Dereham	5			1					37 50		
	Edgar Staples	II	2	4	& 8 Blandford & Blenheim	3				1					22	50
	J. A. McDonald	II	1	15	E. Zorra	4				1					22	50
	R. A. Hutchinson	III	2	6	Dereham	3				1					22	50
	John Templar	II	1	13	& 3 N. & S. Norwich	3				1					22	50
Parry Sound	A. M. Currie	I	14		Parry Sound Town	66	1				1500 00					
	C. Arthur Curtis	II			Parry Sound Town											
	John Hemphill	I	6		Burk's Falls Village	18	1				500 00					
	John Maxwell	II	2		Sundridge Village	7				1					45	00
	John C. Laing	III	1	8	Perry	5				1					45	00
	Rose E. Smith	III	1	6	McKellar	5				1					45	00
	Ethel McFarlane	III	1	2	Christie	4				1					45	00
Peel	A. M. Burchell	I	4		Bolton Village	31	1				150 00					
Perth	W. J. Bruder	II	3		Milverton Village	9			1					37 50		
	D. Grant Anderson	II	2	10	Elma	7			1					37 50		
	Thos. Hutchinson	II	1	4	Mornington	7			1					37 50		
	Annie L. Hudson	I	1	10	Blanshard	3				1					22	50
	Jessie Bell	I	1	7	Downie	4				1					22	50
	Chas. T. Smith	III	1	7	Ellice	3				1					22	50
	Bevan Grainger	II	1	5	Elma	5				1					22	50
	Edward Slaughter	II	1	6	"	3				1					22	50
	G. A. Marks	III	2	C. 4	Fullarton	4				1					22	50
	Maggie Marks	II	2	C. 6	Logan	3				1					22	50
	Eliza Gordon	II	1	11	Logan	3				1					22	50
Peterborough	J. A. O'Donohue	II	3	4	Ennismore	22	1				150 00					
	D. L. Somerville	II	5		Havelock Village	10		1				75 00				
	Peter T. Pilkie	II	2	4	Otonabee	4				1					22	50
Prescott & Russell	Willis F. Myers	II	2	3	Cumberland	8			1					37 50		
	Hector Kennedy	II	3	2	Russell	10			1					37 50		
	A. May Sparling	II	2	2	Cumberland	5				1					22	50
	Winnetta E. Rutherford	II	2	4	"	3				1					22	50
Prince Edward	Miss H. MacSteven	II	2		Wellington Village	14		1				75 00				
	F. B. Clarke	I	2	7	Hallowell	15		1				75 00				
	J. M. Roote	II	1	11	Ameliasburgh	7			1					37 50		
	Miss S. McCullough	III	1	10	S. Marysburgh	5				1					22	50
Rainy River and Thunder Bay	Geo. E. Smith	III	1	8	Sophiasburgh	4				1					22	50
	A. C. Crosby, M.A	I	4		Fort Frances Town	11	1				300 00					
	F. C. Poole	I	5	1	Keewatin	10	1				300 00					

† $300 for Model Training School. ‡ Special grant, $100.

APPENDIX E.—*Continued.*

Inspectorate.	Name of Principal and Degree; also Assistant when he gives full time to Continuation Class work.	Professional Certificate.	No. of Teachers.		Name of School.	No. of Pupils.	Class of School.				Amount of Government Grant.			
							A	B	C	D	A	B	C	D
											$ c.	$ c.	$ c.	$ c.
Rainy River.—*Con.*	G. A. Evans	III	3	1	Schreiber	5			1				75 00	
	A. W. R. Doan	I	4		Rainy River Town	3				1				45 00
Renfrew	D. R. Harrison	II	5		Eganville, Village	16		1				†37 50		
	Rachel Whelan	III	1	2	Brudenell	6			1				37 50	
	Herbert Cumming	III	1	1	McNab	5				1				22 50
	Kate O'Reilly	III	1	4	Bagot	4				1				22 50
	Geo. Hunt	I	3		Cobden, Village	8				1				22 50
	Alice Parisien	III	2	3	B. Rolph	5				1				22 50
	Wm. I. O'Dair	III	1	4	Ross	4				1				22 50
	Carrie Jack	III	1	5	Stafford	7				1				22 50
	James Wilson	II	2	7	Westmeath	17				1				22 50
	James C. Rupell	Dist.	1	8	"	5				1				22 50
Simcoe, E., and S. W. Muskoka	Mary Lett	III	1	2	Wilberforce	3				1				22 50
	Thos. Allingham	I	2		Penetanguishene, Town	45	1				300 00			
	Winnifred Seery	I			" "									
	Wm. Brant	III	1	8	Oro	3				1				22 50
	Thos. Scott	II	2	2	Stephenson	6			1				75 00	
	Alice Jefferies	III	1	3	Medora	3				1				45 00
	A. Harvey	II	2		Port Carling Village	5				1				45 00
	Eliza Shea	III	1	6	Muskoka	3				1				45 00
Simcoe, N	Kathryn McKee, B.A	I	4		Creemore, Village	13	1				150 00			
	R. H. Watson	II	4	5	Flos	16			1				37 50	
	N. Christie	III	2	3	Nottawasaga	4				1				22 50
	G. Sutherland	II	2	14	"	4				1				22 50
	G. Perry	III	2	5	" and Osprey	8				1				22 50
	Miss F. Owens	III	1	7	Flos	4				1				22 50
	A. D. Campbell	III	1	4	Sunnidale	3				1				22 50
Simcoe, S. W.	J. A. Speers, M.A	I	7		Alliston, Town	86	1				300 00			
	Winnifred Bell	I			" "									
	Walter L. C. Richardson	I	6		Stayner "	41	1				300 00			
	Dora Richardson	II			" "									
	David Hicks, M.A	I	4		Beeton, Village	25	1				300 00			

	Lewis Marlin	I	4		Tottenham, Village	48	1			300 00						
	Miss A. E. Mabeer	I			" "											
	Ira E. Clark	I	4	5	Essa	28	1			300 00						
	John A. Gibb	III			"											
	J. P. Cowles	III	2	7	"	17		1			75 00					
	Annie Reynolds	III	1	5	Adjala	5			1				37 50			
	Edward Ayerst	III	1	6	Essa	5			1				37 50			
	Annie Wallace	II	1	4	Innisfil	6			1				37 50			
	John A. Corbett	II	1	9	"	5			1				37 50			
	Matthew Johnstone	II	1	3	Sunnidale	8			1				37 50			
	Wm. Burkholder	II	1	6	Sunnidale	6			1				37 50			
	Thos. Irwin	II	1	4	Tossorontio	5			1				37 50			
	Geo. Wilson	II	1	5	"	8			1				37 50			
	Robt. A. Campbell	III	1	2	Essa	3				1					22 50	
	Mabel Stelle	III	1	3	"	3				1					22 50	
	Wm. W. Wilson	III	1	9	"	3				1					22 50	
	Geo. C. Scott	III	2	10	"	4				1					22 50	
	Ernest Selby	III	1	5	W. Gwillimbury	3				1					22 50	
	Herbert Johnson	II	2	10	"	4				1					22 50	
	Robt. Little	II	1	6	Innisfil	4				1					22 50	
	W. T. Baker	I	1	7	"	3				1					22 50	
	Wilfred E. Wolfe	III	1	8	"	3				1					22 50	
	Joseph W. Stewart	III	2	10	"	4				1					22 50	
	Mary Gugins	III	1	7	Tecumseth	3				1					22 50	
	Herbert Schmietendorf	III	1	8	"	4				1					22 50	
	Wilmot Davidson	III	1	11	"	3				1					22 50	
	Marshall Murday	III	1	2	Tossorontio	3				1					22 50	
	Margaret Colbert	II	1	6	"	3				1					22 50	
	Edward Kidd	II	1	8	"	4				1					22 50	
Stormont	James Froats	I	3	3	Finch	17	1			150 00						
	Gertrude R. Bigelow	I	3	4	Osnabruck	15	1			150 00						
	Mabel Drewry	I	3	14	Roxborough	12	1			150 00						
	Susan B. Hazelton	III	2	1	Osnabruck	7			1				37 50			
	Willis Sheets	II	2	3	"	12				1					22 50	
	Maggie M. Robb	III	1	15	"	6				1					22 50	
Victoria, E.	Chas. Ramsay	I	5		Bobcaygeon Village	30	1			†112 50						
Victoria, W. & S. E. Muskoka	H. R. Scovell, B.A.	I	13		Bracebridge Town	52	1			600 00						
	Miss M. Hodgins	I			"											
	Geo. D. Rolston	I	6		Fenelon Falls Village	16	1			150 00						
	G. B. Rennie	I	2	12	Mariposa	6				1					22 50	
	C. H. Lapp	I	2	8	"	8				1					22 50	

† For half year. ‡ Half-year A, half-year B.

APPENDIX E.—*Concluded.*

Inspectorate.	Name of Principal and Degree; also Assistant when he gives full time to Continuation Class work.	Professional Certificates.	No. of Teachers.	Name of School.	No. of Pupils.	Class of School.				Amount of Government Grant.			
						A	B	C	D	A	B	C	D
										$ c.	$ c.	$ c.	$ c.
Waterloo, No. 1	J. D. Ramsay	II	9	Hespeler Town	7				1				22 50
	John A. Stewart	II	2 7	Woolwich	11				1				22 50
Waterloo, No. 2	Geo. W. Dale	II	4	Ayr Village	10		1				75 00		
	Gilbert Summers	I	5	New Hamburg Village	4				1				22 50
Welland	D. W. McKay	I	5	Port Colborne, Village	19		1				75 00		
	Gertrude Grant	II	3	Fort Erie "	7		1				75 00		
	Chas. E. Hansel	II	5	Bridgeburg "	20		1				75 00		
	F. T. Harry	II	3 11	Bertie	16		1				75 00		
	Edgar Farr	II	2 9	Pelham	11		1				75 00		
	Grace C. Barron	II	2 3	"	5			1				37 50	
Wellington, N	John W. Yake	I	5	Drayton, Town	60	1				300 00			
	S. E. Jackson, B.A	I		" "									
	J. H. Cunningham	I	8	Palmerston, Town	30	1				300 00			
	V. W. Rutherford	I		" "									
	J. T. Curtis	II	2	2 Peel	7			1				37 50	
	Jno. A. Gray	II		Clifford Village	3				1				22 50
	Lizzie C. Hawken	II	32	7 Peel	3				1				22 50
Wellington, S	Stella Gregory	I	3	Erin Village	32	1				150 00			
	I. W. Hutson, M.A	I	7	Macdonald Con. School	17	1				150 00			
	W. I. Greenaway	II	2	9 Eramosa	5				1				22 50
	Eliza H. McQueen	II	1	8 "	4				1				22 50
	Duncan Ewart	II	1	11 Puslinch	4				1				22 50
	Ira Hammond	II	2	8 "	3				1				22 50
Wentworth	Allan E. Wilcox	II	4	3 Saltfleet	11		1				75 00		
	Geo. W. Clark	II	2	11 Ancaster	6			1				37 50	
	Lettie Raycroft	I	2	3 Barton	3				1				22 50
	Melvin L. Taylor	III	1	15 Beverly	3				1				22 50
	Margaret Lawson	II	1	8 Saltfleet	4				1				22 50
York, N	Fred T. Schooley	I	3	13 E. Gwillimbury	20	1				150 00			
	A. A. Cameron	I	3	14 King	13	1				150 00			
	Jno. T. Power	II	2	5 E. Gwillimbury	7			1				37 50	
	David W. Evans	II	2	17 Vaughan	4			1				125 00	

	Walter Rolling	II	1	23	King	3			1							22	50		
York, S	M. Campbell	I	3		Woodbridge, Village	24	1			150	00								
	J. L. Moore	I	4		North Toronto, Town	12	1			†86	25								
	J. W. English	I	3	1	Etobicoke	5			1							22	50		
Windsor and Walkerville	Hugh A. Beaton	II	9		Walkerville, Town	16		1				75	00						
R. C. Bi-Lingual Schools, East	Sister Mary Cleophas	III	3	15	Gloucester	14			1					37	50				
R. C. Separate School, East	Sr. St. Andrew		4		Westport, Village	34	1			150	00								
	Sr. M. Ernestine		4		Eganville Village	18	1			150	00								
	Beatrice Riordan	II	2		Chesterville "	7			1							22	50		
	Evelyn M. Staley	II	1	2	Wolfe Island	4			1							22	50		
	Anastasia Nolan	II	1	12	Hagarty	3			1							22	50		
R. C. Separate Schools, Central	James E. Jones	I	5		Mattawa, Town	10		1						75	00				
	Sr. Mary Gertrude		5		Sudbury "	5			1							45	00		
	Thomas J. Ryan	II	1	10	Adjala	5			1							22	50		
	Rose McCabe	II	2		Hastings, Village	3			1							22	50		
R. C. Separate Schools, West	Sr. M. Ethelburt		7		Amherstburg Town	25	1			150	00								
	Marie C. Benn	II	2	2	Ashfield	12		1				75	00						
	Sr M. Alberta		4	1	Car & 1 Culross	5			1					37	50				
	Nona Coughlin	II	1	9	Biddulph & 1 McGill	3			1							22	50		
	Marie Gaetzmeyer	III	1	9	Harwich	3			1							22	50		
	Annie J. Moran	III	1	6	Raleigh	3			1							22	50		
	Rose McCarthy	II	1	1	W. Wawanosh	3			1							22	50		
Totals, 1905-6	461 Continuat'n Class teachers	§			429 schools	5,224	88	41	100	200	19,528	75	3,225	00	3,985	00	4,837	50	
" 1904-5	506 " "				482 schools	5,349	78	39	138	227									
Increases							10	2			(6,226	25	1,075	00	1,320	00	1,597	50	Spec'l
Decreases	45 " "				53 schools	125			38	27	(13,302	50	2,150	00	2,665	00	3,240	00)	Regl'r
Total Gov't. grant																	31,576	25	

† Half-year A, half-year D. ‡ For 1904-5. § 131 I class, and 216 II class.

APPENDIX F.—*FREE TEXT BOOKS IN RURAL SCHOOLS, 1906.*

Inspectorate.	Name of school (section number and township) and amount expended for text books.	Total amount expended.	Total amount of Legislative aid.
		$ c.	$ c.
Huron West	4 Goderich, $11.74	11 74	5 87
Lanark	4 Darling, $17.60; 1 Lavant, $10.71	28 31	14 15
Middlesex, West	10 Lobo, $4.35; 6 E. Williams, $25.04	29 39	14 69
Perth	1 Blanshard, $2.68	2 68	1 34
Wentworth	8 Barton, $25.25	25 25	12 62
Totals, 1906	7 schools	97 37	48 67
Totals, 1905	7 "	58 22	29 11
Increases		39 15	19 56

APPENDIX G.—*PROCEEDINGS FOR THE YEAR 1906.*

I. Regulations and Circulars.

Apportionment of the General Legislative Public School Grant for 1906.

The apportionment of the Grant to the several municipalities is based upon the latest Returns of Population for the year 1905 and the division between the Public and Separate Schools on the average attendance of that year as reported by the Inspectors, Public School Boards and Separate School Trustees respectively.

While the Separate Schools will receive their portion of the Grant direct from the Department, that of the Public Schools will be paid, according to this Schedule, through the respective County, City, Town, and Village Treasurers.

Under the provisions of Section 5 of "An Act respecting the Education Department, 1901," the Education Department is empowered to appropriate out of moneys voted by the Legislature for Public and Separate Schools a sum not exceeding $5.00 for every school in which the Regulations of the Department as to equipment, ventilation, heating, lighting and the care of the premises generally have been complied with.

Each County Inspector is therefore authorized to deduct from the apportionment of each township such an amount as will provide the sum of $5.00 to be paid on his order to each Trustee Board that has complied with the requirements mentioned.

May, 1906.

PUBLIC SCHOOL APPORTIONMENT TO COUNTIES FOR 1906

1. COUNTY OF BRANT.

Municipalities.	Apportionment.
Brantford	$574 00
Burford	478 00
Dumfries, South	280 00
Oakland	82 00
Onondaga	119 00
Total	$1,533 00

2. COUNTY OF BRUCE.

Albemarle	$165 00
Amabel	296 00
Arran	253 00
Brant	388 00
Bruce	322 00
Carrick	276 00
Culross	201 00
Eastnor	122 00
Elderslie	213 00
Greenock	225 00
Huron	369 00
Kincardine	307 00
Kinloss	237 00
Lindsay	88 00
St. Edmunds	56 00
Saugeen	161 00
Total	$3,670 00

3. COUNTY OF CARLETON.

Municipalities.	Apportionment.
Fitzroy	$280 00
Gloucester	456 00
Goulbourn	275 00
Gower, North	228 00
Huntley	237 00
March	83 00
Marlborough	164 00
Nepean	514 00
Osgoode	461 00
Torbolton	110 00
Total	$2,808 00

4. COUNTY OF DUFFERIN.

Amaranth	$280 00
Garafraxa, East	217 60
Luther, East	184 00
Melancthon	392 00
Mono	331 00
Mulmur	328 00
Total	$1,732 00

5. COUNTY OF ELGIN.

Municipalities.	Apportionment.
Aldborough	$540 00
Bayham	441 00
Dorchester, South	183 00
Dunwich	369 00
Malahide	418 00
Southwold	405 00
Yarmouth	541 00
Total	$2,897 00

6. COUNTY OF ESSEX.

Anderdon	$175 00
Colchester, North	223 00
Colchester, South	342 00
Gosfield, North	222 00
Gosfield, South	246 00
Maidstone	248 00
Malden	108 00
Mersea	474 00
Pelee Island	76 00
Rochester	107 00
Sandwich, East	89 00
Sandwich, West	198 00
Sandwich, South	139 00
Tilbury, North	53 00
Tilbury, West	200 00
Total	$2,900 00

7. COUNTY OF FRONTENAC.

Barrie	$ 62 00
Bedford	163 00
Clarendon and Miller	95 00
Hinchinbrooke	141 00
Howe Island	.....
Kennebec	136 00
Kingston	284 00
Loughborough	181 00
Olden	126 00
Oso	128 00
Palmerston and N. and S. Canonto	112 00
Pittsburg	251 00
Portland	229 00
Storrington	209 00
Wolfe Island	94 00
Total	$2,211 00

8. COUNTY OF GREY.

Artemesia	$373 00
Bentinck	371 00
Collingwood	398 00
Derby	217 00
Egremont	351 00
Euphrasia	330 00
Glenelg	232 00
Holland	282 00
Keppel	417 00
Normanby	463 00
Osprey	345 00
Proton	390 00
Sarawak	171 00
St. Vincent	307 00
Sullivan	336 00
Sydenham	370 00
Total	$5,353 00

9. COUNTY OF HALDIMAND.

Canborough	$103 00
Cayuga, North	181 00
Cayuga, South	84 00
Dunn	94 00
Moulton	202 00
Oneida	151 00
Rainham	206 00
Seneca	194 00
Sherbrooke	41 00
Walpole	326 00
Total	$1,582 00

10. COUNTY OF HALIBURTON.

Anson and Hindon	$ 30 00
Cardiff	72 00
Dudley, Dysart, Harcourt, Harburn, Guilford	105 00
Glamorgan	58 00
Livingstone	.....
Lutterworth	54 00
McClintock	6 00
Minden	138 00
Monmouth	67 00
Nightingale	.....
Sherbourne	26 00
Snowdon	82 00
Stanhope	55 00
Total	$693 00

11. COUNTY OF HALTON.

Esquesing	$396 00
Nassagaweya	246 00
Nelson	299 00
Trafalgar	372 00
Total	$1,313 00

12. COUNTY OF HASTINGS.

Municipalities.	Apportionment.
Bangor, Wicklow and McClure	$121 00
Carlow	79 00
Dungannon	91 00
Elzevir and Grimsthorpe	159 00
Faraday	91 00
Hungerford	399 00
Huntingdon	249 00
Herschell and Monteagle	207 00
Limerick	62 00
Madoc	316 00
Marmora and Lake	172 00
Mayo	64 00
Rawdon	369 00
Sidney	449 00
Thurlow	408 00
Tudor and Cashel	99 00
Tyendinaga	312 00
Wollaston	99 00
Total	$3,746 00

13. COUNTY OF HURON.

Ashfield	$295 00
Colborne	198 00
Goderich	292 00
Grey	360 00
Hay	343 00
Howick	434 00
Hullett	297 00
McKillop	238 00
Morris	272 00
Stanley	209 00
Stephen	409 00
Tuckersmith	245 00
Turnberry	240 00
Usborne	251 00
Wawanosh, East	208 00
Wawanosh, West	207 00
Total	$4,498 00

14. COUNTY OF KENT.

Camden	$286 00
Chatham	606 00
Dover	373 00
Harwich	492 00
Howard	321 00
Orford	257 00
Raleigh	463 00
Romney	208 00
Tilbury, East	318 00
Zone	130 00
Total	$3,454 00

15. COUNTY OF LAMBTON.

Municipalities.	Apportionment.
Bosanquet	$302 00
Brooke	364 00
Dawn	401 00
Enniskillen	475 00
Euphemia	225 00
Moore	504 00
Plympton	397 00
Sarnia	242 00
Sombra	437 00
Warwick	342 00
Total	$3,689 00

16. COUNTY OF LANARK.

Bathurst	$251 00
Beckwith	182 00
Burgess, North	41 00
Dalhousie and Sherbrooke, North	180 00
Darling	82 00
Drummond	224 00
Elmsley, North	113 00
Lanark	196 00
Lavant	58 00
Montague	223 00
Pakenham	187 00
Ramsay	241 00
Sherbrooke, South	93 00
Total	$2,071 00

17. COUNTY OF LEEDS.

Bastard and Burgess, South	$312 00
Crosby, North	112 00
Crosby, South	164 00
Elizabethtown	453 00
Elmsley, South	83 00
Escott, Front	124 00
Kitley	220 00
Leeds and Lansdowne, Front	285 00
Leeds and Lansdowne, Rear	250 00
Yonge and Escott, Rear	140 00
Yonge, Front	151 00
Total	$2,294 00

17. (a) COUNTY OF GRENVILLE.

Augusta	$415 00
Edwardsburg	388 00
Gower, South	86 00
Oxford, Rideau	299 00
Wolford	180 00
Total	$1,368 00

18. COUNTY OF LENNOX AND ADDINGTON.

Municipalities.	Apportionment.
Adolphustown	$ 68 00
Amherst Island	94 00
Anglesea, Effingham and Kaladar	139 00
Camden, East	509 00
Denbigh, Abinger and Ashley	117 00
Ernestown	324 00
Fredericksburgh, North	167 00
Fredericksburgh, South	106 00
Richmond	262 00
Sheffield	208 00
Total	$1,985 00

19. COUNTY OF LINCOLN.

Caistor	$188 00
Clinton	212 00
Gainsborough	245 00
Grantham	232 00
Grimsby, North	148 00
Grimsby, South	155 00
Louth	208 00
Niagara	295 00
Total	$1,593 00

20. COUNTY OF MIDDLESEX.

Adelaide	$215 00
Biddulph	182 00
Caradoc	414 00
Delaware	173 00
Dorchester, North	497 00
Ekfrid	284 00
Lobo	293 00
London	958 00
McGillivray	302 00
Metcalfe	163 00
Mosa	220 00
Nissouri, West	318 00
Westminster	518 00
Williams, East	157 00
Williams, West	147 00
Total	$4,756 00

21. COUNTY OF NORFOLK.

Charlotteville	$341 00
Houghton	223 00
Middleton	280 00
Townsend	445 00
Walsingham, North	233 00
Walsingham, South	204 00
Windham	373 00
Woodhouse	217 00
Total	$2,316 00

22. COUNTY OF NORTHUMBERLAND.

Municipalities.	Apportionment.
Alnwick	$109 00
Brighton	259 00
Cramahe	273 00
Haldimand	373 00
Hamilton	420 00
Monaghan, South	104 00
Murray	311 00
Percy	302 00
Seymour	327 00
Total	$2,478 00

22. (a) COUNTY OF DURHAM.

Cartwright	$196 00
Cavan	266 00
Clarke	388 00
Darlington	453 00
Hope	350 00
Manvers	329 00
Total	$1,982 00

23. COUNTY OF ONTARIO.

Brock	$401 00
Mara	294 00
Pickering	582 00
Rama	150 00
Reach	383 00
Scott	247 00
Scugog Island	52 00
Thorah	162 00
Uxbridge	293 00
Whitby, East	304 00
Whitby	207 00
Total	$3,075 00

24. COUNTY OF OXFORD.

Blandford	$181 00
Blenheim	495 00
Dereham	401 00
Nissouri, East	294 00
Norwich, North	258 00
Norwich, South	226 00
Oxford, North	141 00
Oxford East	241 00
Oxford, West	240 00
Zorra, East	441 00
Zorra, West	263 00
Total	$3,181 00

25. COUNTY OF PEEL.

Municipalities.	Apportionment.
Albion	$252 00
Caledon	454 00
Chinguacousy	432 00
Gore of Toronto	90 00
Toronto	494 00
Total	$1,712 00

26. COUNTY OF PERTH.

Blanshard	$278 00
Downie	276 00
Easthope, North	248 00
Easthope, South	223 00
Ellice	285 00
Elma	417 00
Fullarton	246 00
Hibbert	182 00
Logan	334 00
Mornington	311 00
Wallace	307 00
Total	$3,107 00

27. COUNTY OF PETERBOROUGH.

Anstruther	$ 38 00
Asphodel	181 00
Belmont	199 00
Burleigh	43 00
Cavendish	15 00
Chandos	88 00
Douro	248 00
Dummer	198 00
Ennismore	96 00
Galway	76 00
Harvey	119 00
Methuen	25 00
Monaghan, North	105 00
Otonabee	358 00
Smith	396 00
Total	$2,095 00

28. COUNTY OF PRESCOTT.

Alfred	$ 36 00
Caledonia	105 00
Hawkesbury, East	237 00
Hawkesbury, West	165 00
Longueuil	60 00
Plantagenet, North	295 00
Plantagenet, South	184 00
Total	$1,082 00

28. (*a*) COUNTY OF RUSSELL.

Cambridge	$194 00
Clarence	149 00
Cumberland	360 00
Russell	143 00
Total	$846 00

29. COUNTY OF PRINCE EDWARD.

Municipalities.	Apportionment.
Ameliasburgh	$288 00
Athol	118 00
Hallowell	342 00
Hillier	159 00
Marysburg, North	130 00
Marysburg, South	135 00
Sophiasburg	193 00
Total	$1,365 00

30. COUNTY OF RENFREW.

Admaston	$240 00
Algona, South	99 00
Alice and Fraser	239 00
Bagot and Blythfield	184 00
Brougham	63 00
Bromley	148 00
Brudenell and Lyndoch	156 00
Grattan	221 00
Griffith and Matawatchan	43 00
Hagarty, Jones, Sherwood, Richards and Burns	210 00
Head, Clara and Maria	38 00
Horton	154 00
McNab	410 00
Pembroke	99 00
Petawawa	124 00
Radcliffe	43 00
Raglan	91 00
Robb, Wylie, McKay, Buchanan	123 00
Ross	224 00
Sebastopol	77 00
Stafford	97 00
Westmeath	382 00
Wilberforce and Algona, North	285 00
Total	$3,750 00

31. COUNTY OF SIMCOE.

Adjala	$234 00
Essa	477 00
Flos	397 00
Gwillimbury, West	248 00
Innisfil	420 00
Matchedash	49 00
Medonte	485 00
Nottawasaga	560 00
Orillia	439 00
Oro	390 00
Sunnidale	242 00
Tay	642 00
Tiny	382 00
Tecumseth	358 00
Tossorontio	185 00
Vespra	307 00
Total	$5,815 00

32. COUNTY OF STORMONT.

Municipalities.	Apportionment.
Cornwall	$593 00
Finch	377 00
Osnabruck	546 00
Roxborough	389 00
Total	$1,905 00

32 (*a*) COUNTY OF DUNDAS.

Matilda	$375 00
Mountain	331 00
Williamsburg	413 00
Winchester	384 00
Total	$1,503 00

32 (*b*) COUNTY OF GLENGARRY.

Charlottenburg	$514 00
Kenyon	447 00
Lancaster	415 00
Lochiel	420 00
Total	$1,796 00

33. COUNTY OF VICTORIA.

Bexley	$ 94 00
Carden	84 00
Dalton	63 00
Eldon	296 00
Emily	173 00
Fenelon	239 00
Laxton, Digby and Longford	83 00
Mariposa	432 00
Ops	255 00
Somerville	206 00
Verulam	225 00
Total	$2,150 00

34. COUNTY OF WATERLOO.

Dumfries, North	$223 00
Waterloo	715 00
Wellesley	446 00
Wilmot	485 00
Woolwich	452 00
Total	$2,321 00

35. COUNTY OF WELLAND.

Bertie	$356 00
Crowland	117 00
Humberstone	314 00
Pelham	282 00
Stamford	224 00
Thorold	199 00
Wainfleet	355 00
Willoughby	105 00
Total	$1,952 00

36. COUNTY OF WELLINGTON.

Municipalities.	Apportionment.
Arthur	$236 00
Eramosa	285 00
Erin	351 00
Garafraxa, West	245 00
Guelph	263 00
Luther, West	226 00
Maryborough	325 00
Minto	335 00
Nichol	187 00
Peel	382 00
Pilkington	147 00
Puslinch	320 00
Total	$3,302 00

37. COUNTY OF WENTWORTH.

Ancaster	$417 00
Barton	425 00
Beverly	441 00
Binbrook	140 00
Flamborough, East	274 00
Flamborough, West	306 00
Glanford	177 00
Saltfleet	399 00
Total	$2,579 00

38. COUNTY OF YORK.

Etobicoke	$499 00
Georgina	192 00
Gwillimbury, East	397 00
Gwillimbury, North	175 00
King	553 00
Markham	580 00
Scarborough	416 00
Vaughan	465 00
Whitchurch	371 00
York	1,323 00
Total	$4,971 00

39. DISTRICTS.

Algoma, Manitoulin, Muskoka, Nipissing, Parry Sound, Rainy River, Thunder Bay, and Temiskaming, including rural public and separate schools, but not any town or village named in this list...	$48,000 00
Total	$48,000 00

APPORTIONMENT TO ROMAN CATHOLIC SEPARATE SCHOOLS FOR 1906, PAYABLE THROUGH THIS DEPARTMENT.

School Sections.	Apportionment.
Adjala	10 $30 00
Alfred	3 21 00
"	6 21 00
" 7 (with 8, Plantagenet, South)	10 00
"	7 24 00
"	8 54 00
"	9 25 00
"	10 80 00
"	11 19 00
"	12 28 00
"	13 26 00
"	14 13 00
"	15 24 00
Admaston	4 15 00
Anderdon, 2, 5 and 8, (with 6 and 9 Sandwich W.)	26 00
" 3 and 4	13 00
" 11	12 00
Appleby, Casimer and Dunnet	1 (Nipissing)
Arthur	3 22 00
"	6 25 00
"	10 30 00
Ashfield	2 50 00
Asphodel	4 20 00
Augusta	15 11 00
Balfour, 1, with 1 Rayside (District of Algoma)	... .
Balfour, 2 (District of Algoma)	... .
Biddulph	3 6 00
"	4 32 00
"	6 13 00
" 9 (with 1 McGillivray)	12 00
Bonfield, 1A, 1B, 2, 4, 5, (District of Nipissing)	... .
Brant (with 3 Greenock)	2 11 00
" (with 4 Greenock)	... 3 00
Brighton	1 (15) 16 00
Bromley	4 17 00
"	6 25 00
"	7 42 00
Brougham	1 7 00
Burgess, North	2 27 00
"	4 8 00
"	6 8 00
Caledonia 3, 4 and 10	16 00
" 6 (with 7 Plantagenet S.)	13 00
"	10 15 00
"	12 34 00
"	13 15 00
Caldwell	1 (Nipissing)
Cambridge	3 32 00
"	4 28 00
"	5 45 00
" 6 and 7	58 00
"	6 18 00
"	14P 27 00
"	15 to be app.
Carrick	1 25 00
" (with 1 Culross)	1 53 00
Carrick	2 19 00
" (with 2 Culross)	2 11 00
"	4 30 00
"	14 98 00
Casey 3 and 4 (Temiscamingue)	
Charlottenburg	15 50 00
Chisholm and Boulter	1 (Nipissing)
Chisholm	2 (Nipissing)
Clarence	3 27 00
"	5 105 00
"	6 73 00
"	8 43 00
"	11 30 00
"	12 19 00
"	13 12 00
"	14 25 00
"	16 26 00
"	17 21 00
"	18 17 00
"	19 26 00
"	20 18 00
"	21 31 00
Coleman (Temiscamingue)	
Cornwall	1 15 00
"	16 71 00
"	17 18 00
Crosby, North	7 4 00
Culross (with 1 Carrick)	1 59 00
" (with 2 Carrick)	2 11 00
Cumberland	10 7 00
"	11 16 00
"	13 22 00
"	14 29 00
Dilke, 6 (District of Algoma)	.....
Downie	9 38 00
Dover	3 72 00
"	7 25 00
"	9 28 00
Dunnett and Rutter, 1 (District of Nipissing)	... .
Edwardsburg	2 2 00
Ellice	1 16 00
"	6 32 00
"	7 20 00
Emily	4 37 00
"	6 22 00
Ferris, 2 (District of Nipissing)	.....
" 3, "	.....
" 4, "	.....
Finch	5 68 00
Gibbons, 1 (District of Nipissing)	.....
Grant, 1 (District of Nipissing)	.....
Greenock, 3 (with 2 Brant)	59 00
" 4 (with Brant)	... 14 00
Glenelg	5 17 00
"	7 26 00
Gloucester, 1 (with 3 Osgoode)	10 00
" 4, 5 and 12	7 00
"	14 51 00
"	15 60 00
"	17 17 00
"	20 11 00

School Sections.		Apportionment.
Gloucester,	22	10 00
"	25	105 00
"	26	25 00
Griffith, etc.	3	17 00
Hagarty	4	45 00
"	12	59 09
Haldimand	2	37 00
"	14	11 00
Harwich	9	19 00
Hawkesbury, East	2	58 00
"	4	15 00
"	6	13 00
"	7	90 00
"	10	46 00
"	11	27 00
"	12	6 00
"	15	17 00
"	16	9 00
"	17	to be app.
"	19	15 00
Hay	1	27 00
Hay	11	20 00
Hibbert (1)	3	23 09
" 2 (with McKillop and Logan)		44 00
" 3 (with McKillop, etc.		3 00
Howe Island	1	8 00
"	2	15 00
"	3	16 00
Holland, etc.	3	7 90
Hullett	2	18 00
Hungerford	14	8 00
Keewatin, 1 (District of Algoma)		
Kenyon	12	9 00
Kingston	8	20 00
Lancaster	14	26 00
Lochiel	11	15 00
"	12A	37 00
"	12B	76 00
Logan (re 6 Ellice)		4 00
" (with 2 Hibbert and McKillop)		1 00
Longueuil, West	2	23 09
"	4A	24 00
"	7	23 00
Loughboro'	2	9 00
"	10	13 00
Maidstone	1	29 09
"	2	26 00
" 4 (with 2 Rochester)		16 00
" 8 (with 5 Sandwich S.)		24 00
Malden	3A	33 00
"	3B	22 00
" with Anderdon	11	3 00
Mara	3	50 00
March	3	42 00
Marmora and Lake	1	22 00
Mason and Cosby 1 (Dist. Nipissing)		
Matawatchan	3	17 00
Moore	3, 4 and 5	8 09
Mornington	4	32 00
McGillivray, 1 (with 9 Biddulph)		10 00
McIntyre	3	(Algoma)
McKillop	1	27 00
" 3 (with Hibbert)		7 00
" (2 Hibbert, etc.)		10 00
McPherson and Kirkpatrick, 1 (District Nipissing)		

School Sections.		Apportionment.
Neelon	1	(Nipissing)
Nepean	7	19 00
"	15	93 00
Nichol	1	11 00
Normanby	5	14 00
"	19	21 00
Osgoode	1	13 00
"	2 (15)	11 00
" 3 (with 1 Gloucester)		11 00
Papineau, 1 (see Dist. of Nipissing)		
" 2 " "		
" 2B " "		
Peel	8	17 00
"	12	13 00
Percy	5	13 00
Percy 12 (with 12 Seymour)		9 00
Plantagenet, North	4	21 00
" "	7	18 00
" "	8	58 00
" "	9	31 00
" "	12	15 00
Plantagenet, South	4	57 00
" "	7	53 00
" " 7 (with 6 Caledonia)		14 00
" "	8	9 00
" " 8 (with 7 Alfred)		8 00
" "	11	40 00
" "	12	13 00
Portland	11	20 00
Proton	6	22 00
Raleigh	5	21 00
"	6	18 00
Rayside, 1 (with 1 Balfour) (Algoma)		
" 2		"
Richmond 10 and 17		13 00
Rochester, 2 (with 4 Maidstone)		21 00
"	3	49 00
"	6	46 00
"	7	30 00
" 8 (with 11 Tilbury West and North)		8 00
" 9 and 14		28 00
" 11 (with 10 Tilbury N.)		7 00
Roxboro'	12	79 00
"	16	11 00
Russell, 1 (with 12 Winchester)		12 00
"	4	19 00
"	6	114 00
"	7	20 00
"	8	39 00
"	13	20 00
"	14	19 00
Sandwich, East	1	86 00
"	2	17 00
"	3	31 00
"	4	104 00
Sandwich, West	1	51 00
"	4	19 00
" 6 and 9 (with 2, " 5, 8 Anderdon)		25 00
Sandwich, South, 5 (with 8 Maidstone)		23 00
Sandwich, South	7	27 00
Seymour, 12 (with 12 Percy)		12 00
Sheffield	5	28 00
Sherwood	6	59 00
Sombra	5	19 00

School Sections.		Apportionment.
Stafford	2	29 00
Stephen	6	35 00
Springer, 1 (Dist. of Nipissing)		
" 2 "	"	
" 3 "	"	
" 5 "	"	
Stanley	1	22 00
Sydenham	7	9 00
Tilbury, N.	1	71 00
"	2	32 00
"	6	24 00
"	7	38 00
" 10 (with 11 Rochester)		17 00
" 11 (with 11 Tilbury W. and 8 Rochester)		8 00
Tilbury, West, 11 (with 11 Tilbury N.) and 8 Rochester		14 00
Tilbury, East	1	8 00
"	3	16 00
Tiny	2	98 00
Toronto Gore	6	13 00
Tyendinaga	18	11 00
"	20	19 00
"	24	19 00
Tyendinaga	28	11 00
"	30	14 00
Waterloo	13	64 00
Wawanosh, West	1	18 00
Wellesley	5	22 00
" 9 and 10		31 00
"	11	77 00
"	12	4 00
Westminster	13	6 00
Widdifield, 2 (Dist. of Nipissing)		
Williams, West	10	13 00
Wilmot	15½	53 00
Winchester, 12 (with 1 Russell)		13 00
Windham	8	55 00
Wolfe Island	1	7 00
"	2	11 00
"	4	36 00
"	7	13 00
Woolwich	10	34 00
Yonge and Escott, R.	4	7 00
York	1	43 00
		$6,955 00

APPORTIONMENT TO CITIES, TOWNS AND VILLAGES FOR 1906.

CITIES.	Public Schools.	Separate Schools.	Total.
CITIES.	$ c.	$ c.	$ c.
Belleville	791 00	230 00	1,021 00
Brantford	2,058 00	278 00	2,336 00
Chatham	934 00	205 00	1,139 00
Guelph	1,164 00	284 00	1,448 00
Hamilton	5,838 00	1,206 00	7,044 00
Kingston	1,611 00	543 00	2,154 00
London	4,435 00	670 00	5,105 00
Niagara Falls	805 00	104 00	909 00
Ottawa	3,584 00	4,120 00	7,704 00
Peterborough	1,171 00	506 00	1,677 00
St. Catharines	1,053 00	270 00	1,323 00
St. Thomas	1,374 00	171 00	1,545 00
Stratford	1,227 00	290 00	1,517 00
Toronto	24,156 00	4,075 00	28,231 00
Windsor	1,109 00	548 00	1,657 00
Woodstock	1,033 00	56 00	1,089 00
Total	$52,343 00	$13,556 00	$65,899 00
TOWNS.			
Alexandria	36 00	232 00	268 00
Alliston	146 00	.....	146 00
Almonte	277 00	69 00	346 00
Amherstburg	121 00	142 00	263 00
Arnprior	284 00	178 00	462 00
Aurora	193 00	.....	193 00
Aylmer	252 00	.....	252 00
Barrie	687 00	104 00	791 00
Berlin	1,053 00	333 00	1,386 00
Blenheim	180 00	.....	180 00
Bothwell	107 00	.....	107 00
Bowmanville	329 00	.....	329 00
Bracebridge	344 00	.....	344 00
Brampton	315 00	.....	315 00
Brockville	859 00	266 00	1,125 00
Bruce Mines	84 00	.....	84 00
Cache Bay	85 00	.....	85 00
Carleton Place	469 00	.....	469 00
Clinton	248 00	.....	248 00
Cobourg	355 00	150 00	505 00
Collingwood	815 00	.....	815 00
Copper Cliff	239 00	.....	239 00
Cornwall	320 00	406 00	726 00
Deseronto	389 00	.....	389 00
Dresden	207 00	.....	207 00
Dundas	329 00	73 00	402 00
Dunnville	277 00	.....	277 00
Durham	213 00	.....	213 00
East Toronto	379 00	.....	379 00
Essex	170 00	.....	170 00
Forest	190 00	.....	190 00
Fort Frances	69 00	23 00	92 00
Fort William	706 00	204 00	910 00
Galt	944 00	68 00	1,012 00
Gananoque	453 00	.....	453 00
Goderich	450 00	58 00	508 00
Gore Bay	96 00	.....	96 00
Gravenhurst	294 00	.....	294 00
Hanover	240 00	.....	240 00

APPORTIONMENT TO CITIES, TOWNS AND VILLAGES FOR 1906.—*Continued.*

TOWNS.—*Continued.*	Public Schools.	Separate Schools.	Total.
	$ c.	$ c.	$ c.
Haileybury	55 00		55 00
Harriston	205 00		205 00
Hawkesbury	59 00	479 00	538 00
Hespeler	260 00		260 00
Huntsville	266 00		266 00
Ingersoll	435 00	53 00	488 00
Kenora	448 00	94 00	542 00
Kincardine	283 00		283 00
Kingsville	185 00		185 00
Leamington	323 00		323 00
Lindsay	625 00	216 00	841 00
Listowel	247 00		247 00
Little Current	86 00		86 00
Massey	38 00	30 00	68 00
Mattawa	27 00	144 00	171 00
Meaford	245 00		245 00
Midland	457 00		457 00
Mitchell	226 00		226 00
Milton	185 00		185 00
Mount Forest	234 00	34 00	268 00
Napanee	402 00		402 00
New Liskeard	114 00		114 00
Newmarket	279 00	28 00	307 00
Niagara	169 00		169 00
North Bay	292 00	159 00	451 00
North Toronto	271 00		271 00
Oakville	191 00	20 00	211 00
Orangeville	318 00		318 00
Orillia	461 00	122 00	583 00
Oshawa	545 00	60 00	605 00
Owen Sound	1,128 00	78 00	1,206 00
Palmerston	240 00		240 00
Parkhill	147 00	30 00	177 00
Paris	388 00	48 00	436 00
Parry Sound	337 00		337 00
Pembroke	385 00	251 00	636 00
Penetanguishene	314 00		314 00
Perth	267 00	128 00	395 00
Petrolea	471 00		471 00
Picton	403 00	37 00	440 00
Port Arthur	624 00	195 00	819 00
Port Hope	516 00		516 00
Powassan	72 00		72 00
Prescott	261 00	110 00	371 00
Preston	246 00	67 00	313 00
Rainy River	96 00	28 00	124 00
Renfrew	215 00	163 00	378 00
Ridgetown	264 00		264 00
Sandwich	110 00	127 00	237 00
Sarnia	907 00	160 00	1,067 00
Sault Ste. Marie	701 00	147 00	848 00
Seaforth	210 00	52 00	262 00
Simcoe	364 00		364 00
Smith's Falls	593 00		593 00
Southhampton	216 00		216 00
Stayner	139 00		139 00
Steelton	179 00	99 00	278 00
Sturgeon Falls	107 00	159 00	266 00
St. Mary's	361 00	44 00	405 00
Strathroy	342 00		342 00

APPORTIONMENT TO CITIES, TOWNS AND VILLAGES FOR 1906.—*Continued.*

TOWNS.—*Continued.*	Public Schools.	Separate Schools.	Total.
	$ c.	$ c.	$ c.
Sudbury	146 00	234 00	380 00
Thessalon	130 00		130 00
Thornbury	95 00		95 00
Thorold	180 00	68 00	248 00
Tillsonburg	260 00		260 00
Toronto Junction	1,013 00		1,013 00
Trenton	318 00	98 00	416 00
Uxbridge	194 00		194 00
Vankleek Hill	71 00	95 00	166 00
Walkerton	242 00	116 00	358 00
Walkerville	221 00	66 00	287 00
Wallaceburg	307 00	64 00	371 00
Waterloo	376 00	93 00	469 00
Welland	213 00		213 00
Whitby	233 00	32 00	265 00
Wiarton	298 00		298 00
Wingham	262 00		262 00
Total	$36,297 00	$6,534 00	$42,831 00
INCORPORATED VILLAGES.			
Acton	183 00		183 00
Ailsa Craig	80 00		80 00
Alvinston	93 00		93 00
Arkona	57 00		57 00
Arthur	83 00	63 00	146 00
Athens	106 00		106 00
Ayr	105 00		105 00
Bancroft	69 00		69 00
Bath	45 00		45 00
Bayfield	61 00		61 00
Beamsville	94 00		94 00
Beaverton	100 00		100 00
Beeton	86 00		86 00
Belle River		69 00	69 00
Blyth	117 00		117 00
Bobcaygeon	108 00		108 00
Bolton	57 00		57 00
Bradford	118 00		118 00
Bridgeburg	144 00		144 00
Brighton	155 00		155 00
Brussels	137 00		137 00
Burk's Falls	92 00		92 00
Burlington	159 00		159 00
Caledonia	95 00		95 00
Campbellford	298 00		298 00
Cannington	119 00		119 00
Cardinal	141 00		141 00
Casselman	10 00	72 00	82 00
Cayuga	115 00		115 00
Chatsworth	48 00		48 00
Chesley	238 00		238 00
Chesterville	81 00	29 00	110 00
Chippawa	93 00		93 00
Clifford	68 00		68 00
Cobden	90 00		90 00
Colborne	122 00		122 00
Creemore	80 00		80 00

APPORTIONMENT TO CITIES, TOWNS AND VILLAGES FOR 1906.—*Continued.*

INCORPORATED VILLAGES.—*Continued.*	Public Schools.	Separate Schools.	Total.
	$ c.	$ c.	$ c.
Delhi	86 00		86 00
Drayton	95 00		95 00
Dundalk	98 00		98 00
Dutton	103 00		103 00
Eganville	68 00	60 00	128 00
Elmira	160 00		160 00
Elora	127 00	26 00	153 00
Embro	67 00		67 00
Erin	60 00		60 00
Exeter	187 00		187 00
Fenelon Falls	142 00		142 00
Fergus	168 00	7 00	175 00
Fort Erie	118 00		118 00
Garden Island	28 00		28 00
Georgetown	166 00		166 00
Glencoe	97 00		97 00
Grand Valley	101 00		101 00
Grimsby	111 00		111 00
Hagersville	115 00		115 00
Hastings	53 00	42 00	95 00
Havelock	121 00		121 00
Hensall	107 00		107 00
Hintonburg	146 00	204 00	350 00
Holland Landing	48 00		48 00
Iroquois	122 00		122 00
Kemptville	157 00		157 00
Lakefield	149 00		149 00
Lanark	97 00		97 00
Lancaster	61 00		61 00
L'Orignal	117 00	32 00	149 00
Lucan	95 00		95 00
Lucknow	120 00		120 00
Madoc	121 00		121 00
Markdale	110 00		110 00
Markham	113 00		113 00
Marmora	69 00		69 00
Maxville	97 00		97 00
Merrickville	112 00		112 00
Merritton	150 00	43 00	193 00
Millbrook	103 00		103 00
Milverton	93 00		93 00
Morrisburg	178 00		178 00
Newboro'	51 00		51 00
Newburgh	57 00		57 00
Newbury	44 00		44 00
Newcastle	77 00		77 00
New Hamburg	149 00		149 00
Norwich	150 00		150 00
Norwood	104 00		104 00
Oil Springs	100 00		100 00
Omemee	79 00		79 00
Ottawa East	80 00	105 00	185 00
Paisley	108 00		108 00
Point Edward	115 00		115 00
Portsmouth	53 00	22 00	75 00
Port Carling	32 00		32 00
Port Colborne	146 00		146 00
Port Dalhousie	67 00	30 00	97 00
Port Dover	124 00		124 00
Port Elgin	157 00		157 00

APPORTIONMENT TO CITIES, TOWNS AND VILLAGES FOR 1906.—*Continued.*

INCORPORATED VILLAGES.—*Concluded.*	Public Schools	Separate Schools	Total
	$ c.	$ c.	$ c.
Port Perry	146 00		146 00
Port Rowan	75 00		75 00
Port Stanley	68 00		68 00
Richmond	57 00		57 00
Richmond Hill	73 00		73 00
Rockland	27 00	197 00	224 00
Shelburne	139 00		139 00
Springfield	51 00		51 00
Stirling	62 00		62 00
Stouffville	142 00		142 00
Streetsville	64 00		64 00
Sundridge	47 00		47 00
Sutton	72 00		72 00
Tara	73 00		73 00
Teeswater	102 00		102 00
Thamesville	73 00		73 00
Thedford	71 00		71 00
Tilbury	67 00	75 00	142 00
Tiverton	60 00		60 00
Tottenham	64 00		64 00
Tweed	128 00	28 00	156 00
Vienna	39 00		39 00
Wardsville	37 00		37 00
Waterdown	79 00		79 00
Waterford	126 00		126 00
Watford	149 00		149 00
Wellington	75 00		75 00
Weston	149 00	11 00	160 00
Westport	41 00	44 00	85 00
Winchester	138 00		138 00
Woodbridge	71 00		71 00
Woodville	51 00		51 00
Wyoming	79 00		79 00
Wroxeter	49 00		49 00
Total	$12,920 00	$1,159 00	$14,079 00

SUMMARY OF APPORTIONMENT FOR 1906,

	COUNTIES	Public Schools.	Separate Schools.	Total.
		$ c.	$ c.	$ c.
1.	Brant	1,533 00	.....	1,533 00
2.	Bruce	3,670 00	393 00	4,063 00
3.	Carleton	2,808 00	485 00	3,293 00
4.	Dufferin	1,732 00	.....	1,732 00
5.	Elgin	2,897 00	.....	2,897 00
6.	Essex	2,900 00	980 00	3,880 00
7.	Frontenac	2,211 00	168 00	2,379 00
8.	Grey	5,353 00	116 00	5,469 00
9.	Haldimand	1,582 00	.....	1,582 00
10.	Halburton	693 00	.....	693 00
11.	Halton	1,313 00	.....	1,313 00
12.	Hastings	3,746 00	104 00	3,850 00
13.	Huron	4,498 00	234 00	4,732 00
14.	Kent	3,454 00	207 00	3,661 00
15.	Lambton	3,689 00	27 00	3,716 00
16.	Lanark	2,071 00	43 00	2,114 00
17.	Leeds and Grenville	3,662 00	24 00	3,686 00
18.	Lennox and Addington	1,985 00	41 00	2,026 00
19.	Lincoln	1,593 00	.....	1,593 00
20.	Middlesex	4,756 00	92 00	4,848 00
21.	Norfolk	2,316 00	55 00	2,371 00
22.	Northumberland and Durham	4,460 00	98 00	4,558 00
23.	Ontario	3,075 00	50 00	3,125 00
24.	Oxford	3,181 00	.....	3,181 00
25.	Peel	1,712 00	13 00	1,725 00
26.	Perth	3,107 00	213 00	3,320 00
27.	Peterborough	2,095 00	20 00	2,115 00
28.	Prescott and Russell	1,928 00	2,139 00	4,067 00
29.	Prince Edward	1,365 00	.....	1,365 00
30.	Renfrew	3,750 00	332 00	4,082 00
31.	Simcoe	5,815 00	128 00	5,943 00
32.	Stormont, Dundas and Glengarry	5,204 00	488 00	5,692 00
33.	Victoria	2,150 00	59 00	2,209 00
34.	Waterloo	2,321 00	285 00	2,606 00
35.	Welland	1,952 00	.....	1,952 00
36.	Wellington	3,302 00	118 00	3,420 00
37.	Wentworth	2,579 00	.....	2,579 00
38.	York	4,971 00	43 00	5,014 00
	Total	111,429 00	6,955 00	118,384 00
39.	Districts— (a) Algoma, (b) Manitoulin, (c) Muskoka, (d) Nipissing, (e) Parry Sound, (f) Rainy River, (g) Thunder Bay, (h) Temiscamingue — Exclusive of the towns and villages, which appear in the general list	46,000 00	2,000 00	48,000 00
	Total	46,000 00	2,000 00	48,000 00

GRAND TOTALS.

	$ c.	$ c.	$ c.
Counties	111,429 00	6,955 00	118,384 00
Cities	52,343 00	13,556 00	65,899 00
Towns	36,297 00	6,534 00	42,831 00
Villages	12,920 00	1,159 00	14,079 00
Districts	46,000 00	2,000 00	48,000 00
Totals	258,989 00	30,204 00	289,193 00

APPORTIONMENT OF THE SPECIAL LEGISLATIVE PUBLIC AND SEPARATE SCHOOL GRANT FOR 1906.

The apportionment of the Special Legislative Grant for Public and Separate Schools for 1906 among the townships of the Province is based primarily upon the population of each as compared with the population of all the townships of the Province (not including the territorial districts) according to the annual returns from the municipal clerks; and secondly where there are Separate Schools in a township it is divided between the Public and Separate Schools according to the average number of pupils attending such schools respectively.

While the Separate Schools will receive their portion of the Special Grant (divided among them equally for 1906 in the same way as in the Public Schools), direct from the Department, that of the Public Schools, according to this schedule, is to be divided by the Inspector equally for 1906 among all the Public Schools of each township, subject to the following regulation of the Education Department in regard to School Sections composed of portions of different townships in the same or different counties :

"The apportionment to each school composed of portions of different townships in the same or different counties, from the Special Legislative Grant to each township concerned, shall, as far as practicable, be that fraction of the grant to each of the other schools of the township which the average attendance from the township at said school is of the total average attendance at said school; thus, for example, if the total average attendance is 24, 8 being the average from one township and 16 from the other, the school shall be reckoned as *one-third* of a school in computing the apportionment in the first township, and as *two-thirds* of a school in computing the apportionment in the second."

The Legislative grant apportioned to the Public Schools of each township per this schedule is to be paid to the Treasurer of the County in which such township is situated on or before the First day of July, as the Lieutenant-Governor in Council may direct.

Under the Act of 1906 amending the Public Schools Act, it is compulsory upon the municipal council of every organized county to levy and collect by an equal rate upon the taxable property of the whole county, per section 39 of the said Amending Act, a sum at least the equivalent of the special grant made by the Legislative Assembly to the rural Public and Separate Schools of the county. Such county grant shall be payable to the trustees of the respective schools receiving special legislative grants in the same proportions as the said special legislative grants are apportioned.

Each County Council is therefore required to make provision forthwith for at least the equivalent to the special Rural Schools grant by the Legislature to the townships of its county as per this schedule and to arrange to pay the same upon the certificate of the Public or Separate School Inspector that such payments are due as at least the equivalent of the sums apportioned and payable by the Education Department.

May, 1906.

PUBLIC AND SEPARATE SCHOOL SPECIAL APPORTIONMENT FOR 1906.

COUNTY OF BRANT.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.		$ c.
Brantford	291 00		291 00
Burford	242 00		242 00
Dumfries, South	142 00		142 00
Oakland	41 00		41 00
Onondaga	60 00		60 00
Total	$776 00		$776 00

COUNTY OF BRUCE.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Albermarle	83 00		83 00
Amabel	150 00		150 00
Arran	128 00		128 00
Brant	197 00	7 00	204 00
Bruce	163 00		163 00
Carrick	142 00	118 00	260 00
Culross	102 00	35 00	137 00
Eastnor	62 00		62 00
Elderslie	108 00		108 00
Greenock	114 00	37 00	151 00
Huron	182 00		182 00
Kincardine	155 00		155 00
Kinloss	120 00		120 00
Lindsay	45 00		45 00
St. Edmunds	29 00		29 00
Saugeen	82 00		82 00
Total	$1,862 00	$197 00	$2,059 00

COUNTY OF CARLETON.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Fitzroy	142 00		142 00
Gloucester	231 00	150 00	381 00
Goulburn	140 00		140 00
Gower, North	115 00		115 00
Huntley	120 00		120 00
March	42 00	22 00	64 00
Marlborough	83 00		83 00
Nepean	260 00	57 00	317 00
Osgoode	234 00	17 00	251 00
Torbolton	56 00		56 00
Total	$1,423 00	$246 00	$1,669 00

COUNTY OF DUFFERIN.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.		$ c.
Amaranth	142 00		142 00
Garafraxa, East	110 00		110 00
Luther, East	93 00		93 00
Melancthon	198 00		198 00
Mono	168 00		168 00
Mulmur	167 00		167 00
Total	$878 00		$878 00

COUNTY OF ELGIN.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.		$ c.
Aldborough	274 00		274 00
Bayham	223 00		223 00
Dorchester, South	93 00		93 00
Dunwich	187 00		187 00
Malahide	212 00		212 00
Southwold	205 00		205 00
Yarmouth	274 00		274 00
Total	$1,468 00		$1,468 00

COUNTY OF ESSEX.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Anderdon	88 00	26 00	114 00
Colchester, North	113 00		113 00
Colchester, South	173 00		173 00
Gosfield, North	112 00		112 00
Gosfield, South	125 00		125 00
Maidstone	126 00	48 00	174 00
Malden	55 00	29 00	84 00
Mersea	240 00		240 00
Pelee Island	38 00		38 00
Rochester	54 00	96 00	150 00
Sandwich, East	45 00	121 00	166 00
Sandwich, West	100 00	48 00	148 00
Sandwich, South	71 00	25 00	96 00
Tilbury, North	27 00	96 00	123 00
Tilbury, West	103 00	7 00	110 00
Total	$1,470 00	$496 00	$1,966 00

COUNTY OF FRONTENAC.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Barrie	31 00		31 00
Bedford	82 00		82 00
Clarendon and Miller	48 00		48 00
Hinchinbrooke	71 00		71 00
Howe Island		20 00	20 00
Kennebec	69 00		69 00
Kingston	144 00	10 00	154 00
Loughborough	92 00	11 00	103 00
Olden	64 00		64 00
Oso	65 00		65 00
Palmerston and North and South Canonto	57 00		57 00
Pittsburg	127 00		127 00
Portland	116 00	10 00	126 00
Storrington	106 00		106 00
Wolfe Island	48 00	34 00	82 00
Total	$1,120 00	$85 00	$1,205 00

COUNTY OF GREY.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Artemesia	189 00		189 00
Bentinck	188 00		188 00
Collingwood	202 00		202 00
Derby	110 00		110 00
Egremont	178 00		178 00
Euphrasia	167 00		167 00
Glenelg	117 00	22 00	139 00
Holland	142 00	4 00	146 00
Keppel	212 00		212 00
Normanby	235 00	17 00	252 00
Osprey	175 00		175 00
Proton	197 00	12 00	209 00
Sarawak	86 00		86 00
St. Vincent	156 00		156 00
Sullivan	170 00		170 00
Sydenham	187 00	5 00	192 00
Total	$2,711 00	$60 00	$2,771 00

COUNTY OF HASTINGS.

Municipalities.	Apportionment.		Total.
	Public Schools	Separate Schools.	
	$ c.	$ c.	$ c.
Bangor, McClure and Wicklow	61 00		61 00
Carlow	40 00		40 00
Dungannon	47 00		47 00
Elzevir and Grimsthorp	81 00		81 00
Faraday	46 00		46 00
Hungerford	201 00	5 00	206 00
Huntingdon	126 00		126 00
Herschell and Monteagle	104 00		104 00
Madoc	160 00		160 00
Marmora and Lake	87 00	11 00	98 00
Mayo	33 00		33 00
Rawdon	187 00		187 00
Sidney	228 00		228 00
Thurlow	207 00		207 00
Tudor and Cashel	50 00		50 00
Limerick	31 00		31 00
Wollaston	50 00		50 00
Tyendinaga	159 00	37 00	196 00
Total	$1,898 00	$53 00	$1,951 00

COUNTY OF HALIBURTON.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.		$ c.
Anson and Hindon	15 00		15 00
Cardiff	37 00		37 00
Dudley, Dysart, Harcourt, Harburn and Guilford	53 00		53 00
Glamorgan	30 00		30 00
Livingstone			
Lutterworth	27 00		27 00
McClintock	3 00		3 00
Minden	70 00		70 00
Monmouth	34 00		34 00
Nightingale			
Sherbourne	13 00		13 00
Snowdon	41 00		41 00
Stanhope	28 00		28 00
Total	$351 00		$351 00

COUNTY OF HALTON.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.		$ c.
Esquesing	200 00		200 00
Nassagaweya	125 00		125 00
Nelson	152 00		152 00
Trafalgar	188 00		188 00
Total	$665 00		$665 00

COUNTY OF HALDIMAND.

Municipalities.	Apportionment.		Totals.
	Public Schools.	Separate Schools.	
	$ c.		$ c.
Canborough	52 00		52 00
Cayuga, North	91 00		91 00
Cayuga, South	43 00		43 00
Dunn	48 00		48 00
Moulton	102 00		102 00
Oneida	77 00		77 00
Rainham	104 00		104 00
Seneca	98 00		98 00
Sherbrooke	21 00		21 00
Walpole	165 00		165 00
Total	$801 00		$801 00

COUNTY OF HURON.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Ashfield	150 00	25 00	175 00
Colborne	101 00		101 00
Goderich	148 00		148 00
Grey	182 00		182 00
Hay	173 00	24 00	197 00
Howick	220 00		220 00
Hullett	151 00	9 00	160 00
McKillop	120 00	23 00	143 00
Morris	138 00		138 00
Stanley	106 00	11 00	117 00
Stephen	207 00	18 00	225 00
Tuckersmith	124 00		124 00
Turnberry	122 00		122 00
Usborne	127 00		127 00
Wawanosh, East	105 00		105 00
Wawanosh, West	105 00	9 00	114 00
Total	$2,279 00	119 00	$2,398 00

COUNTY OF LANARK.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Bathurst	127 00		127 00
Beckwith	92 00		92 00
Burgess, North	21 00	21 00	42 00
Dalhousie and Sherbrooke, North	91 00		91 00
Darling	42 00		42 00
Drummond	114 00		114 00
Elmsley, North	57 00		57 00
Lanark	100 00		100 00
Lavant	29 00		29 00
Montague	113 00		113 00
Pakenham	95 00		95 00
Ramsay	122 00		122 00
Sherbrooke, South	47 00		47 00
Total	$1,050 00	$21 00	$1,071 00

COUNTY OF KENT.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Camden	145 00		145 00
Chatham	307 00		307 00
Dover	189 00	64 00	253 00
Harwich	250 00	9	259 00
Howard	162 00		162 00
Orford	130 00		130 00
Raleigh	235 00	20 00	255 00
Romney	105 00		105 00
Tilbury, East	161 00	12 00	173 00
Zone	66 00		66 00
Total	$1,750 00	$105 00	$1,855 00

COUNTY OF LAMBTON.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Bosanquet	153 00		153 00
Brooke	185 00		185 00
Dawn	203 00		203 00
Enniskillen	241 00		241 00
Euphemia	114 00		114 00
Moore	256 00	4 00	260 00
Plympton	201 00		201 00
Sarnia	122 00		122 00
Sombra	221 00	10 00	231 00
Warwick	173 00		173 00
Total	$1,869 00	$14 00	$1,883 00

COUNTY OF GRENVILLE.

Municipalities.	Apportionment.		Totals.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Augusta	210 00	6 00	216 00
Edwardsburg	197 00	1 00	198 00
Gower, South	43 00		43 00
Oxford, Rideau	152 00		152 00
Wolford	91 00		91 00
Total	$693 00	$7 00	$700 00

COUNTY OF LEEDS.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Bastard and Burgess South	158 00		158 00
Crosby, North	57 00	2 00	59 00
Crosby, South	83 00		83 00
Elizabethtown	229 00		229 00
Elmsley, South	42 00		42 00
Escott, Front	63 00		63 00
Kitley	112 00		112 00
Leeds & Lansdowne Front	144 00		144 00
Leeds and Lansdowne Rear	127 00		127 00
Yonge and Escott, Rear	71 00	4 00	75 00
Yonge, Front	76 00		76 00
Total	$1,162 00	$6 00	$1,168 00

COUNTY OF LENNOX AND ADDINGTON.

Municipalities.	Apportionment.		Totals.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Adolphustown	34 00		34 00
Amherst Island	48 00		48 00
Anglesea, Effingham and Kaladar	70 00		70 00
Camden, East	253 00		253 00
Denbigh, Abinger and Ashley	59 00		59 00
Ernestown	164 00		164 00
Fredericksburg, North	85 00		85 00
Fredericksburg, South	54 00		54 00
Richmond	133 00	6 00	139 00
Sheffield	106 00	14 00	120 00
Total	$1,006 00	$20 00	$1,026 00

COUNTY OF LINCOLN.

Municipalities.	Apportionment.		Totals.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Caistor	95 00		95 00
Clinton	108 00		108 00
Gainsborough	124 00		124 00
Grantham	118 00		118 00
Grimsby, North	75 00		75 00
Grimsby, South	78 00		78 00
Louth	105 00		105 00
Niagara	104 00		104 00
Total	$807 00		$807 00

COUNTY OF MIDDLESEX.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Adelaide	109 00		109 00
Biddulph	91 00	33 00	124 00
Caradoc	210 00		210 00
Delaware	88 00		88 00
Dorchester, North	207 00		207 00
Ekfrid	144 00		144 00
Lobo	148 00		148 00
London	486 00		486 00
McGillivray	153 00	5 00	158 00
Metcalfe	85 00		85 00
Mosa	111 00		111 00
Nissouri, West	162 00		162 00
Westminster	262 00	3 00	265 00
Williams, East	79 00		79 00
Williams, West	74 00	7 00	81 00
Total	$2,409 00	$48 00	$2,447 00

COUNTY OF NORFOLK.

Municipality.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Charlotteville	173 00		173 00
Houghton	113 00		113 00
Middleton	142 00		142 00
Townsend	226 00		226 00
Walsingham North	118 00		118 00
Walsingham, South	103 00		103 00
Windham	189 00	28 00	217 00
Woodhouse	110 00		110 00
Total	$1,174 00	$28 00	$1,202 00

COUNTY OF DURHAM.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Cartwright	99 00		99 00
Cavan	135 00		135 00
Clarke	197 00		197 00
Darlington	230 00		230 00
Hope	177 00		177 00
Manvers	167 00		167 00
Total	$1,005 00		$1,005 00

COUNTY OF NORTHUMBERLAND.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Alnwick	55 00		55 00
Brighton	131 00	8 00	139 00
Cramahe	139 00		139 00
Haldimand	189 00	24 00	213 00
Hamilton	213 00		213 00
Monaghan, South	53 00		53 00
Murray	158 00		158 00
Percy	153 00	11 00	164 00
Seymour	166 00	6 00	172 00
Total	$1,257 00	$49 00	$1,306 00

COUNTY OF ONTARIO.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Brock	203 00		203 00
Mara	149 00	26 00	175 00
Pickering	295 00		295 00
Rama	76 00		76 00
Reach	194 00		194 00
Scott	124 00		124 00
Scugog Island	27 00		27 00
Thorah	82 00		82 00
Uxbridge	149 00		149 00
Whitby, East	154 00		154 00
Whitby	105 00		105 00
Total	$1,558 00	$26 00	$1,584 00

COUNTY OF PEEL.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Albion	128 00		128 00
Caledon	220 00		220 00
Chinguacousy	219 00		219 00
Gore of Toronto	45 00	7 00	52 00
Toronto	256 00		256 00
Total	$868 00	$7 00	$875 00

COUNTY OF OXFORD.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Blandford	92 00		92 00
Blenheim	251 00		251 00
Dereham	203 00		203 00
Nissouri, East	149 00		149 00
Norwich, North	131 00		131 00
Norwich, South	114 00		114 00
Oxford, North	72 00		72 00
Oxford, East	122 00		122 00
Oxford, West	122 00		122 00
Zorra, East	223 00		223 00
Zorra, West	133 00		133 00
Total	$1,612 00		$1,612 00

COUNTY OF PERTH.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Blanshard	141 00		141 00
Downie	140 00	19 00	159 00
Easthope, North	126 00		126 00
Easthope, South	113 00		113 00
Ellice	145 00	34 00	179 00
Elma	211 00		211 00
Fullarton	124 00		124 00
Hibbert	92 00	36 00	128 00
Logan	169 53	2 47	172 00
Mornington	158 00	16 00	174 00
Wallace	156 00		156 00
Total	$1,575 53	$107 47	$1,683 00

COUNTY OF PRESCOTT.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Alfred	18 00	175 00	193 00
Caledonia	53 00	48 00	101 00
Hawkesbury, East	120 00	150 00	270 00
Hawkesbury, West	84 00		84 00
Longueuil	31 00	35 00	66 00
Plantaganet, North	149 00	73 00	222 00
Plantaganet, South	93 00	98 00	191 00
Total	$548 00	$579 00	$1,127 00

COUNTY OF PETERBOROUGH.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Anstruther	19 00		19 00
Asphodel	92 00	10 00	102 00
Belmont	101 00		101 00
Burleigh	22 00		22 00
Cavendish	8 00		8 00
Chandos	44 00		44 00
Douro	126 00		126 00
Dummer	100 00		100 00
Ennismore	48 00		48 00
Galway	39 00		39 00
Harvey	60 00		60 00
Methuen	13 00		13 00
Monaghan, North	54 00		54 00
Otonabee	181 00		181 00
Smith	155 00		155 00
Total	$1,062 00	$10 00	$1,072 00

COUNTY OF RUSSELL.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Cambridge	99 00	105 00	204 00
Clarence	76 00	239 00	315 00
Cumberland	182 00	38 00	220 00
Russell	72 00	124 00	196 00
Total	$429 00	$506 00	$935 00

COUNTY OF PRINCE EDWARD.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.		$ c.
Ameliasburg	146 00		146 00
Athol	60 00		60 00
Hallowell	173 00		173 00
Hillier	80 00		80 00
Marysburg, North	66 00		66 00
Marysburg, South	69 00		69 00
Sophiasburg	98 00		98 00
Total	$692 00		$692 00

COUNTY OF RENFREW.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Admaston	122 00	7 00	129 00
Algona, South	50 00		50 00
Alice and Fraser	120 00		120 00
Bagot and Blythfield	93 00		93 00
Brougham	31 00	4 00	35 00
Bromley	75 00	43 00	118 00
Brudenell and Lyndoch	79 00		79 00
Grattan	112 00		112 00
Griffith and Matawatchan	21 00	18 00	39 00
Hagarty, Jones, Sherwood, Richards, Burns	107 00	82 00	189 00
Head, Clara and Maria	22 00		22 00
Horton	78 00		78 00
McNab	207 00		207 00
Pembroke	50 00		50 00
Petewawa	63 00		63 00
Radcliffe	22 00		22 00
Ragian	46 00		46 00
Rolph, Wylie, McKay, Buchanan	62 00		62 00
Ross	114 00		114 00
Sebastopol	39 00		39 00
Stafford	49 00	15 00	64 00
Westmeath	194 00		194 00
Wilberforce and Algona North	144 00		144 00
Total	$1,900 00	$169 00	$2,069 00

COUNTY OF SIMCOE.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Adjala	119 00	15 00	134 00
Essa	242 00		242 00
Flos	201 00		201 00
Gwilliambury, West	126 00		126 00
Innisfil	213 00		213 00
Matchedash	25 00		25 00
Medonte	245 00		245 00
Nottawasaga	284 00		284 00
Orillia	222 00		222 00
Oro	198 00		198 00
Sunnidale	123 00		123 00
Tay	325 00		325 00
Tiny	194 00	50 00	244 00
Tecumseth	181 00		181 00
Tossorontio	94 00		94 00
Vespra	156 00		156 00
Total	$2,948 00	$65 00	$3,013 00

COUNTY OF STORMONT.

Municipalities.	Apportionment,		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Cornwall	300 00	53 00	353 00
Finch	191 00	34 00	225 00
Osnabruck	276 00	.....	276 60
Roxborough	197 00	46 00	243 00
Total	$964 00	$133 00	$1,097 00

COUNTY OF DUNDAS.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Matilda	190 00	.....	190 00
Mountain	168 00	.....	168 00
Williamsburg	210 00	.....	210 00
Winchester	194 00	7 00	201 00
Total	$762 00	$7 00	$769 00

COUNTY OF GLENGARRY.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Charlottenburg	260 00	26 00	286 00
Kenyon	227 00	4 00	231 00
Lancaster	210 00	13 00	223 00
Lochiel	213 00	65 00	278 00
Total	$910 00	$108 00	$1,018 00

COUNTY OF VICTORIA.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Bexley	48 00		48 00
Carden	43 00		43 00
Dalton	32 00		32 00
Eldon	150 00		150 00
Emily	88 00	30 00	118 00
Fenelon	121 00		121 00
Laxton, Digby and Longford	42 00		42 00
Mariposa	219 00		219 00
Ops	129 00		129 00
Somerville	104 00		104 00
Verulam	114 00		114 00
Total	$1,090 00	$30 00	$1,120 00

COUNTY OF WATERLOO.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Dumfries, North	113 00		113 00
Waterloo	362 00	33 00	395 00
Wellesley	226 00	68 00	294 00
Wilmot	246 00	27 00	273 00
Woolwich	229 00	17 00	246 00
Total	$1,176 00	$145 00	$1,321 00

COUNTY OF WELLINGTON.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Arthur	121 00	38 00	159 00
Eramosa	145 00		145 00
Erin	178 00		178 00
Garafraxa, West	124 00		124 00
Guelph	133 00		133 00
Luther, West	115 00		115 00
Maryborough	165 00		165 00
Minto	170 00		170 00
Nichol	96 00	5 00	101 00
Peel	193 00	15 00	208 00
Pilkington	74 00		74 00
Puslinch	162 00		162 00
Total	$1,676 00	$58 00	$1,734 00

COUNTY OF WELLAND.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.		$ c.
Bertie	181 00		181 00
Crowland	59 00		59 00
Humberstone	160 00		160 00
Pelham	143 00		143 00
Stamford	114 00		114 00
Thorold	101 00		101 00
Wainfleet	180 00		180 00
Willoughby	53 00		53 00
Total	$991 00		$991 00

COUNTY OF WENTWORTH.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.		$ c.
Ancaster	212 00		212 00
Barton	215 00		215 00
Beverly	223 00		223 00
Binbrook	71 00		71 00
Flamborough, East	139 00		139 00
Flamborough, West	155 00		155 00
Glanford	90 00		90 00
Saltfleet	203 00		203 00
Total	$1,308 00		$1,308 00

COUNTY OF YORK.

Municipalities.	Apportionment.		Total.
	Public Schools.	Separate Schools.	
	$ c.	$ c.	$ c.
Etobicoke	253 00		253 00
Georgina	97 00		97 00
Gwillimbury, East	201 00		201 00
Gwillimbury, North	89 00		89 00
King	281 00		281 00
Markham	294 00		294 00
Scarboro'	211 00		211 00
Vaughan	236 00		236 00
Whitchurch	188 00		188 00
York	670 00	22 00	692 00
Total	$2,520 00	$22 00	$2,542 00

APPORTIONMENT OF SPECIAL LEGISLATIVE GRANT TO ROMAN CATHOLIC RURAL SEPARATE SCHOOLS FOR 1906, PAYABLE THROUGH THIS DEPARTMENT.

School Sections.	Apportionment.
Adjala, No. 10	$15 00
Alfred, No. 3	15 22
" No. 6	15 22
" No. 7 ..... $7.61, with No. 8 Plantagenet South, $8.17	15 78
" No. 7	15 22
" No. 8	15 22
" No. 9	15 22
" No. 10	15 22
" No. 11	15 22
" No. 12	15 22
" No. 13	15 21
" No. 14	15 21
" No. 15	15 21
Admaston, No. 4	7 00
Anderdon, No. 2, 5 and 8, $5.66, with No. 6 and 9, Sandwich West, $9.60	15 26
" No. 3 and 4	11 30
" No. 11, $9.04, with Malden $2.63	11 67
Arthur, No. 3	12 66
" No. 6	12 67
" No. 10	12 67
Ashfield, No. 2	25 00
Asphodel, No. 4	10 00
Augusta, No. 15	6 00
Biddulph, No. 3	9 43
" No. 4	9 43
" No. 6	9 43
" No. 9, $4.71, with No. 1 McGillivray, $5.00	9 71
Brant, No. 2, $3.09, with No. 3 Greenock, $19.00	22 09
" $3.91, with No. 4 Greenock, $18.00	21 91
Brighton, No. 1 (15)	8 00
Bromley, No. 4	14 34
" No. 6	14 33
" No. 7	14 33
Brougham, No. 1	4 00
Burgess North, No. 2	7 00
" No. 4	7 00
" No. 6	7 00
Caledonia, No. 3, 4 and 10	10 67
" No. 6, $5.33, with No. 7 Plantagenet South, $8.17	13 50
" No. 10	10 67
" No. 12	10 67
" No. 13	10 66
Cambridge, No. 3	17 50
" No. 4	17 50
" No. 5	17 50
" No. 6 and 7	17 50
" No. 6	17 50
" No. 14P	17 50
Carrick, No. 1	23 60
" No. 1, $11.80, with No. 1 Culross, $23.39	35 19
" No. 2	23 60
" No. 2, $11.80, with No. 2 Culross, $11.61	23 41
" No. 4	23 60
" No. 14	23 60
Charlottenburg, No. 15	26 00
Clarence, No. 3	17 08
" No. 5	17 08
" No. 6	17 07
" No. 8	17 07
" No. 11	17 07
" No. 12	17 07
" No. 13	17 07

School Sections.	Apportionment
Clarence, No. 14	17 07
" No. 16	17 07
" No. 17	17 07
" No. 18	17 07
" No. 19	17 07
" No. 20	17 07
" No. 21	17 07
Cornwall, No. 1	17 67
" No. 16	17 67
" No. 17	17 66
Crosby North, No. 7	2 00
Cumberland, No. 10	9 50
" No. 11	9 50
" No. 13	9 50
" No. 14	9 50
Downie, No. 9	19 00
Dover, No. 3	21 34
" No. 7	21 33
" No. 9	21 33
Edwardsburg, No. 2	1 00
Ellice, No. 1	11 77
" No. 6, $10.46, with Logan, $1.88	12 34
" No. 7	11 77
Emily, No. 4	15 00
" No. 6	15 00
Finch, No. 5	34 00
Glenelg, No. 5	11 00
" No. 7.	11 00
Gloucester, No. 1, $8.82, with No. 3 Osgoode, $3.40	12 22
" No. 4, 5, 12	17 65
" No. 14	17 65
" No. 15	17 65
" No. 17	17 65
" No. 20	17 65
" No. 22	17 65
" No. 25	17 64
" No. 26	17 64
Griffith, etc., No. 3	9 00
Hagarty, No. 4	27 33
" No. 12	27 33
Haldimand, No. 2	12 00
" No. 14	12 00
Harwich, No. 9	9 00
Hawkesbury East, No. 2	15 00
" No. 4	15 00
" No. 6	15 00
" No. 7	15 00
" No. 10	15 00
" No. 11	15 00
" No. 12	15 00
" No. 15	15 00
" No. 16	15 00
" No. 19	15 00
Hay, No. 1	12 00
" No. 11	12 00
Hibbert (1), No. 3	16 43
" No. 2, $13.60, with McKillop $2.00, and Logan $0.59	16 19
Howe Island, No. 1	6 67
" No. 2	6 67
" No. 3	6 66
Holland, etc., No. 3	4 00
Hullett, No. 2	9 00
Hungerford, No. 14	5 00
Kenyon, No. 12	4 00
Kingston, No. 8	10 00
Lancaster, No. 14	13 00
Lochiel, No. 11	21 67
" No. 12A	21 67

School Sections.	Apportionment
Lochiel, No. 12B	21 66
Longueuil West, No. 2	11 67
" No. 4A	11 67
" No. 7	11 66
Loughboro, No. 2	5 50
" No. 10	5 50
Maidstone, No. 1	16 00
" No. 2	16 00
" No. 4, $8.00, with No. 2, Rochester, $9.54	17 54
" No. 8, $8.00, with No. 5, Sandwich S., $8.34	16 34
Malden, No. 3A	13 19
" No. 3B	13 18
Mara, No. 3	26 00
March, No. 3	22 00
Marmora and Lake, No. 1	11 00
Matawatchan, No. 3	9 00
Moore, No. 3, 4 and 5	4 00
Mornington, No. 4	16 00
McKillop, No. 1	12 84
" No. 3, $8.16, with Hibbert, $5,97	14 13
Nepean, No. 7	28 50
" No. 15	28 50
Nichol, No. 1	5 00
Normanby, No. 5	8 50
" No. 10	8 50
Osgoode, No. 1	6 80
" No. 2 (15)	6 80
Peel, No. 8	7 50
" No. 12	7 50
Percy, No. 5	7 33
" No. 12, $3.67, with No. 12 Seymour, $6,00	9 67
Plantagenet North, No. 4	14 60
" No. 7	14 60
" No. 8	14 60
" No. 9	14 60
" No. 12	14 60
Plantagenet South, No. 4	16 34
" No. 7	16 33
" No. 8	16 33
" No. 11	16 33
" No. 12	16 33
Portland, No. 11	10 00
Proton, No. 6	12 00
Raleigh, No. 5	10 00
" No. 6	10 00
Richmond, No. 10 and 17	6 00
Rochester, No. 3	19 07
" No. 6	19 07
" No. 7	19 07
" No. 9 and 14	19 07
Roxboro', No. 12	23 00
" No. 16	23 00
Russell, No. 1, $9.54, with No. 12 Winchester, $7.00	16 54
" No. 4	19 08
" No. 6	19 08
" No. 7	19 08
" No. 8	19 08
" No. 13	19 07
" No. 14	19 07
Sandwich East, No. 1	30 25
" No. 2	30 25
" No. 3	30 25
" No. 4	30 25
Sandwich West, No. 1	19 20
" No. 4	19 20
Sandwich South, No. 7	16 66
Sheffield, No. 5	14 00
Sherwood, No. 6	27 34

School Sections.	Apportionment
Sombra, No. 5	10 00
Stafford, No. 2	15 00
Stephen, No. 6	18 00
Stanley, No. 1	11 00
Sydenham, No. 7	5 00
Tilbury N., No. 1	19 53
" No. 2	19 53
" No. 6	19 53
" No. 7	19 52
" No. 10, $13.01, with No. 11 Rochester, $6.36	19 37
" No. 11, $4.88, with No. 11 Tilbury West, $7.00 and No. 8 Rochester, $3.82	15 70
Tilbury East, No. 1	6 00
" No. 3	6 00
Tiny, No. 2	50 00
Toronto Gore, No. 6	7 00
Tyendinaga, No. 18	7 40
" No. 20	7 40
" No. 24	7 40
" No. 28	7 40
" No. 30	7 40
Waterloo, No. 13	33 00
Wawanosh West, No. 1	9 00
Wellesley, No. 5	17 00
" No. 9 and 10	17 00
" No. 11	17 00
" No. 12	17 00
Westminster, No. 13	3 00
Williams West, No. 10	7 00
Wilmot, No. 15½	27 00
Windham, No. 8	28 00
Wolfe Island, No. 1	8 50
" No. 2	8 50
" No. 4	8 50
" No. 7	8 50
Woolwich, No. 10	17 00
Yonge and Escott R., No. 4	4 00
York, No. 1	22 00
Total	$3,526 47

SUMMARY OF APPORTIONMENT OF SPECIAL LEGISLATIVE GRANT TO RURAL PUBLIC AND SEPARATE SCHOOLS FOR 1906.

Counties.	Public Schools.	Separate Schools.	Total.
	$ c.	$ c.	$ c.
Brant	776 00	.....	776 00
Bruce	1,862 00	197 00	2,059 00
Carleton	1,423 00	246 00	1,669 00
Dufferin	878 00	.....	878 00
Elgin	1,468 00	.....	1,468 00
Essex	1,470 00	496 00	1,966 00
Frontenac	1,120 00	85 00	1,205 00
Grey	2,711 00	60 00	2,771 00
Haldimand	801 00	.....	801 00
Haliburton	351 00	.....	351 00
Halton	665 00	.....	665 00
Hastings	1,898 00	53 00	1,951 00
Huron	2,279 00	119 00	2,398 00
Kent	1,750 00	105 00	1,855 00
Lambton	1,869 00	14 00	1,883 00
Lanark	1,050 00	21 00	1,071 00
Leeds and Grenville	1,855 00	13 00	1,868 00
Lennox and Addington	1,006 00	20 00	1,026 00
Lincoln	807 00	.....	807 00
Middlesex	2,409 00	48 00	2,457 00
Norfolk	1,174 00	28 00	1,202 00
Northumberland and Durham	2,262 00	49 00	2,311 00
Ontario	1,558 00	26 00	1,584 00
Oxford	1,612 00	.....	1,612 00
Peel	868 00	7 00	875 00
Perth	1,575 53	107 47	1,683 00
Peterborough	1,062 00	10 00	1,072 00
Prescott and Russell	977 00	1,085 00	2,062 00
Prince Edward	692 00	.....	692 00
Renfrew	1,900 00	169 00	2,069 00
Simcoe	2,948 00	65 00	3,013 00
Stormont, Dundas and Glengarry	2,636 00	248 00	2,884 00
Victoria	1,090 00	30 00	1,120 00
Waterloo	1,176 00	145 00	1,321 00
Welland	991 00	.....	991 00
Wellington	1,676 00	58 00	1,734 00
Wentworth	1,308 00	.....	1,308 00
York	2,520 00	22 00	2,542 00
Total	$56,473 53	$3,526 47	$60,000 00

PATRIOTIC PROGRAMMES FOR OCTOBER, NOVEMBER, DECEMBER, JANUARY, FEBRUARY, 1906-1907.

Issued by the Imperial Order of the Daughters of the Empire, with the approval of the Minister of Education, for use in schools on the Fridays of each month.

OCTOBER.

The Navy of England.

"It is on the British Navy under the good providence of God, the Wealth, Safety and Strength of the Kingdom chiefly depend."

What are the Naval Stations and fortifications of the Empire?

State date of Battle of Trafalgar, vessels taking part in that engagement and their commanders.
What Colonies contribute to the support of the British Navy?

Readings.

Our Navy for a thousand years - - - - - - - - Eardley Wilmot
English seamen of the sixteenth century - - - - - - - - - Froude
The Navy League Journal (copies will be sent by the Order on application.)
Song - The Song of the Sea to Victory - Olga Rudd

NOVEMBER.

England.

"To England under Indian skies,
To those dark millions of her realm!
To Canada whom we love and prize,
What ever Statesman hold the helm."—*Tennyson.*

In what date was St. Paul's Cathedral built? State its style of architecture.
Name celebrations of note that have taken place in this Church.
What monuments erected to heroes are to be found there?
State other matters of interest connected with this celebrated cathedral.
Name Shakepeare's birth place, its location and description.
Name four great English poets, four great statesmen.
Name the cathedrals of England.

Readings.

Expansion of England - - - - - Sir J. R. Seeley
The Empire and the Century - - - Goldman (Editor)
The Christmas Carol - - - - - - - Dickens
Song - - - - True Born Englishman. .....

December.

WEST INDIES.

"Or over hills with peaky top engrail'd
And many a track of palm and rice,
The Throne of Indian Cama slowly sailed,
A summer fann'd with spice."—*Tennyson.*

How many islands are embraced in the term West Indies?
Name them and sketch principal incident of history in connection with the early days.
What tends to make these islands a very valuable possession apart from the natural products?
What is the form of Government?
How many islands comprise the Bahamas and under what protection are the islands?
What is their feeling towards Great Britain?

Readings.

The West Indies and the Empire - - - - H. de R. Walker
At last—A Christmas in the West Indies - - - Charles Kingsley
The West Indies and a Spanish Main - - - Anthony Trollope
Song - - Stand up for the dear old flag.

JANUARY.

Gibraltar.

"Of old sat Freedom on the heights,
The Thunders breaking at her feet,
Above her shook the starry lights,
She heard the torrents meet."—*Tennyson.*

The great siege of Gibraltar 1779-1782 illustrating the magnitude of the struggle in which England was engaged during the American war.
Sketch the important battles fought in the neighbourhood of Gibraltar.
Mention the importance of Gibraltar to the Empire to-day as a position in the Mediterranean on the high road to the East.
What is its importance in the new scheme of Imperial Defence?

Readings.

Gibraltar and its sieges - - - - - - - - Brassey
S. Vincent and Trafalgar in "Deeds that won the Empire."
Song - - - - English War Song.

FEBRUARY.

British India.

"Thy prayer was Light—more
—Light while time shall last!
Thou sawest a glory growing on the night,
But not the shadows which that light would cast,
Till shadows vanish in the Light of Light."—*Tennyson.*

What is comprised in British India?
The extent of its Territories, its products, its wealth.
State its Provinces and population.
What is the religious condition of this vast country?
Sketch form of Government. Name most efficient Viceroys.

Readings.

India Life and Travel - - - - - A. H. Leowowens
India, Old and New - - - - - - - Hopkins
Forty years in India - - - - - - - Roberts
Heroes of the Indian Empire - - - - - - Foster
Song - - - - His Majesty the King.

CHANGES IN THE DEPARTMENT OF EDUCATION AND SCHOOLS ACTS.

Circulars to School Officials and Municipal Councils.

Important changes, affecting both the Education Department and the Public School system were made during the recent session of the Legislature. To some of these changes the Minister desires to direct the special attention of school officials and municipal councils.

The Department of Education.

Under the Act respecting the Department of Education, a Superintendent of Education has been appointed, and an Advisory Council will be elected next November. Subject to the Minister, the Acts, and the Regulations, the Superintendent will have the general supervision and direction of all branches of the Primary and Secondary School systems; and the Advisory Council, besides discharging the examination functions of the present Educational Council, will act as a consultative council to the Minister on such subjects as he may submit to it for consideration. Notwithstanding these provisions, all official correspondence, it should be noted, shall, as heretofore, be conducted through the Deputy Minister.

General Improvement of the Public Schools.

After due consideration of the educational situation, which, from various causes, is now a critical one, the Government became convinced that it would be necessary, as the first step in the general improvement of the Public Schools, to provide without delay better trained teachers and to secure an increase in the salaries of the rural teachers in particular. These conclusions were approved of by the Legislature at its recent session; and, accordingly, a first grant was then made for the erection of additional Normal Schools, to supersede nearly all the present Model Schools, and a scheme of mimimum salaries was adopted, graded according to the section assessment.

Without a general improvement in salaries, it would be manifestly useless to require candidates for the teaching profession to take, as the scheme contemplates, a longer course of professional training. This improvement has, indeed, become imperative in view of the greater inducements now offered in other callings, and the increasing yearly exodus from the ranks of the Ontario teachers.

Section 39 of the amending Public Schools Act of 1906 amends section 70 of the Act of 1901. The following are its main provisions, which, owing to their importance, are here given in full:

(1) The municipal council of every organized county shall levy and collect by an equal rate upon the taxable property of the whole county (not included in urban municipalities or annexed to any urban municipality for school purposes) according to the equalized assessments of the municipalities, in the manner provided by this Act and The Municipal and Assessment Acts, a sum which shall be at least the equivalent of all special grants made by the Legislative Assembly to the rural schools of the county, and such sum shall be payable to the trustees of the respective schools receiving such legislative special grants in the same proportions as the said special grants are apportioned.

(2) Where the assessed value of all the taxable property of the public school supporters in any township of an organized county is at least equal to an average assessment of $30,000 for each public school section therein, the municipal council of such township shall levy and collect by assessment upon the taxable property of the public

school supporters of the whole township in the manner provided by this Act and The Municipal and Assessment Acts, the sum of $300 at least for every public school where a teacher or principal teacher is engaged for a whole year exclusive of vacations, and a proportionate amount of such sum of $300 at least, where a teacher or principal teacher is engaged for six months or longer; and the additional sum of at least $200 for an assistant teacher engaged for a whole year exclusive of vacations, and a proportionate amount of such sum of $200 at least, where an assistant teacher is engaged for six months or longer.

(3) Where such assessed value is less than an average assessment of $30,000 for each public school section in any township, the municipal council of such township shall levy and collect as aforesaid the sum of $150 at least for every public school where a teacher or principal teacher is engaged for a whole year exclusive of vacations, and a proportionate amount of said sum of $150 at least where a teacher or principal teacher is engaged for six months or longer; and an additional sum of at least $100 for every assistant teacher engaged for a whole year exclusive of vacations, and a proportionate amount of such sum of $100 at least, where such assistant teacher is engaged for six months or longer.

(4) The sums so levied and collected by the council of the township shall, after the expiration of the present calendar year, be applied exclusively to teachers' salaries.

(5) In addition to the sum provided by the township council towards each teacher's salary, the trustees of every rural school section shall, in the cases hereinafter mentioned, pay annually, after the expiration of the current calendar year, to the teacher, where there is only one, and to the principal teacher where there are more teachers than one, at least the sum hereinafter mentioned (subject only to a proportionate reduction in case the whole year's salary does not become due) that is to say:

(*a*) $200 where the assessed value of the taxable property of the public school supporters in the section is at least $200,000;

(*b*) $150 where such assessed value is at least $150,000 but less than $200,000;

(*c*) $100 where such assessed value is at least $100,000, but less than $150,000;

(*d*) $50 where such assessed value is at least $50,000, but less than $100,000;

(*e*) $25 where such assessed value is at least $30,000, but less than $50,000;

And $100 to every assistant teacher, whatever such assessed value is.

The said trustees in making their annual estimates and requisitions for school moneys to be levied and collected from the ratepayers, shall include whatever amount, considering their other sources of income, is necessary to provide for such payment or payments.

(10) All moneys hereby required to be levied and collected and applied to the salaries of teachers shall be paid to the treasurers of the respective public school boards from time to time as may be required by the school trustees.

The Public Schools Act of 1901 prescribes that the teacher's salary shall be paid quarterly. Unfortunately, it appears, this provision has sometimes been overlooked or ignored. The main difficulty in complying with the Act has been removed by subsection 10, above; for the obligation to borrow the necessary funds will no longer devolve on the Section School Board.

At its recent session the Legislature voted the sum of $60,000 as a special grant to the rural schools of the organized counties. Such special grants with the corresponding county grants [see subsection (1) above], and the usual general grant (the three grants for the year amounting to over $240,000), will, after this year, be distributed, not on the average attendance as heretofore in the case of the ordinary legislative grant, but "on the basis of the salaries paid to the teachers, the character of the accommodations, and the value of the equipment, after providing a minimum grant for each such school, which is equipped as required by the Regulations of the Education Department." [See Act of 1906 respecting the Department of Education, sec. 22, subsection (5).] For the distribution of these three grants for the present year, section 23 of the Education Department Act of 1906 makes special provision, and the apportionment of the general and special legislative grants is given in detail in the circulars which have just been issued by the Education Department.

No restriction has been made in the new Acts as regards the application of the general, special and county grants, nor for the present year as regards the application of the additional township grants. As, however, the new

mode of distribution of both the legislative grants as well as the county grants, comes into operation next year, the Minister desires to point out that it will be eminently prudent for every School Board to expend its extra income, during the coming half-year, on the improvement of the school accommodations and equipment. Suggestions and directions as to both of these subjects will, it is expected, be issued by the Education Department early next July.

As it is most important that the recent changes in the amended Acts and the regulations and instructions depending thereon, should be thoroughly understood, the Minister directs the Public School Inspector to modify his ordinary routine for the coming half-year so as to have time to discuss the changes with at least the chairman of each School Board and with the County Council and the Municipal Councils in his inspectorate.

Continuation Classes.

In pursuance of the Government's policy to place the Continuation Classes on a better financial and educational basis, the sum of $10,000 was voted by the Legislature for the scientific equipment and the libraries of these classes, making its total grant $32,000. This year's special grant of $10,000 will be distributed by the Education Department amongst the present four grades of schools on the same basis as was the $20,000 grant last year for ordinary maintenance: and, in accordance with sec. 8, sub-sec. (6), of the Public Schools Act of 1901, county councils are required to provide forthwith at least the equivalent of this special grant also. The Minister, it should be added, intends to recommend the Legislature to continue to vote each year at least the amount of this additional grant, which will, however, be applied in future to ordinary maintenance.

A list of books suitable for Continuation Classes will be found in the High School Catalogue of Books for Reference Libraries of 1902, and especially in the Supplementary Catalogue of 1905. Both of these have already been distributed amongst the schools. The selection should include suitable works of reference in the departments taken up in the school classes. Lists of scientific apparatus, suitable for the present courses, will be sent shortly to each County Inspector for distribution amongst Continuation Classes. The teacher of each school may himself suggest suitable purchases of books and apparatus; but it is most important that no purchases should be made with the special grant unless the selections have been thoroughly considered and have been approved of by the County Inspector. It will be part of the Inspector's duty to see that this special grant and the county equivalent have been fully and properly expended by the end of the current year, if he finds this to be practicable. But, for the sake of the schools, the equipment should, of course, be provided without unnecessary delay.

In order to bring the Continuation Classes more directly under the control of the Education Department, and to raise them to a condition of uniform efficiency, provision was made at the last session of the Legislature for the appointment of a special departmental Inspector. As soon as the schools re-open, after the coming holidays, this officer will begin his duties, inspecting all of grades A and B, and as many as may be convenient of grades C and D. It is not, however, intended that the Departmental Inspector shall supersede the County Inspector, to whose zeal the present number and efficiency of the Continuation Classes are largely due. The County Inspector will still visit these schools as heretofore; one of his visits, however, being paid, if possible, in company with the Departmental Inspector, who will notify him of his intended visit.

The following statutory amendments of the Public Schools Act affecting Continuation Classes also claim the attention of school officials and municipal councils:

Sec. 3 provides for the grouping of any number of Public and Separate Schools, not situated in a High School district. Such schools may, accordingly, be attended and maintained by both Public and Separate School supporters, as are the present High Schools.

Sec. 5 provides that, when two or more counties are united for municipal purposes, the council may apportion the amount to be levied, so that each county shall be liable only for the sums payable in respect of its Continuation Classes. Under this provision, one county may give greater aid to its Continuation Classes than the others of the union give to theirs.

Sec. 4 provides that the qualifications of the teachers shall be hereafter prescribed by the Regulations of the Education Department. As soon as practicable the whole question of the organization and management of these schools will be taken into consideration. Until this is settled, the qualifications of the teachers shall be those prescribed under the Public Schools Act of 1901. [See section 8, subsection (5).]

Other Changes.

The additional sum of $12,000 was also voted at the recent session of the Legislature for Poor Schools and for the general equipment of the Territorial (District) Schools, making a total grant for such schools of $77,000. The share of the special grant of $12,000 apportioned to the Territorial Schools by the Education Department will this year be distributed equally amongst them and special consideration will be given to the most needy of the Poor Schools.

Besides the changes dealt with in this circular, a number of other important amendments have been made to the Public Schools Act. Some of these deal with the confirmation of school sections (sec. 29), the expropriation of land for school purposes (sec. 38), and the remuneration of Public School Inspectors and the conditions under which they may be dismissed (secs. 47, 48, and 49). Copies of the new Act respecting the Education Department and the Act amending the Public Schools Act are now being distributed. To these, in their entirety, the Minister directs the attention of the school officials and municipal councils.

May 28th, 1906.

ACCOMMODATIONS AND EQUIPMENT OF RURAL PUBLIC AND SEPARATE SCHOOLS.

Approved by the Education Department, July, 1906

Instructions to Inspectors and School Boards.

By the Act of 1906, respecting the Department of Education, the basis of distribution of Legislative grants to Rural, Public and Separate Schools has been changed. (Sec. 23, sub-secs. 5 and 6.) After the present year, the general and special Legislative grants and the county equivalent to the latter will be divided on the basis of the salaries paid the teachers, the character of the accommodations, and the value of the equipment, after providing a mini-

mum grant for each such school which is equipped as required by the Regulations of the Education Department. The scheme for this distribution will be settled by the close of the present year, and will be similar in character to that which has proved so effective in the case of the High Schools. (See Regulation 149.) It will, accordingly, provide for the payment of a percentage of the salary paid the teacher over the minimum prescribed by the recent Public Schools Amendment Act, a percentage of the value of the equipment over the minimum prescribed herein, and graded sums under each heading of the accommodations as detailed herein.

As a guide to Inspectors and Rural School Boards, the instructions of this circular are now issued. In the case of the details prescribed below under "Accommodations," the Inspector is directed to use his judgment in securing them, having due regard to the interests of education, the capabilities of the present premises, and the financial competency of the boards. These details are, however, obligatory in the case of new buildings, and they are the basis on which, using his discretion, he shall found his grading. The Inspector will grade the accommodations in his report to each School Board during the first half of 1907, and will, in that year, distribute on the new basis, the Legislative and County grants concerned. In order to do this satisfactorily, it would be well for him to make for himself a tentative grading of the accommodations of each of his schools, during the coming half year, on the supposition that there will be three grades under each heading.

As already pointed out in Circular 15, of May, 1906, it will be eminently prudent for every School Board to spend its extra income during the coming half year on the improvement of the school accommodations and the equipment. Before making such improvement, each Board should consult the Inspector, whom, in the same circular, the Minister directs to modify his ordinary routine for the coming half-year so as to have time to discuss the changes with at least the Chairman of each School Board and with the County Council and the Township Councils in his inspectorate. For this purpose he should also convene meetings of the ratepayers and the school trustees. It is not probable that a large number of the schools will be able to secure in the first year the highest grading under many of the heads, but an effort should be made by each School Board to effect at an early date as many improvements as its finances will permit. Cases will, no doubt, arise in which School Boards will be unable to complete their improvements during the coming half-year. In such cases, in grading the accommodations and valuing the equipment, it will be at the discretion of the Inspector to recognize improvements made during the first half of 1907, even after his official visit, if duly reported and certified to him by the Principal and the Board of Trustees, on a date to be fixed by the Inspector, before the ensuing distribution of the grant. In this connection it is important to note that the grant to each township is separate from those to the other townships in the County, and, accordingly, except in the case of certain union sections, the schools of each township will compete for the grant only amongst themselves. It will therefore be prudent for the Inspector to begin with a high standard of grading and to maintain the same standard throughout his inspectorate. To both of these provisions, it is manifest, he cannot attach too great importance.

The details under the head of "Minimum Equipment," given below, are now obligatory and should be provided as soon as practicable. Until it provides this minimum, no school shall share in the Legislative and County grants after the present year. When, however, the Inspector is satisfied that a Board is too poor to comply with the requirements, he may, at his discretion, extend the time till the summer of 1908.

ACCOMMODATIONS.

(1) *School Grounds.*—As a minimum, the school site shall not be less than one acre in area, accessible by good highways and not exposed to disturbing noises. The school grounds shall be properly levelled and drained, and at least 100 yards from stagnant water, and provided with adequate walks of plank, brick, flags, gravel, or cement. For the highest grading the grounds shall also be ample for school games and for an ornamental plot in front. They should also be set out with trees and ornamental shrubs, and enclosed by a neat and substantial fence or hedge, with suitable gates (iron preferred). Unless so enclosed, the school grounds shall not be rated of the highest grade. In order to ensure good drainage and water supply, the soil should, if practicable, be sandy or gravelly, not clayey or peaty. No trees shall be placed so close to the school building as to check the free passage of air and light. About one-third of the play-grounds should be allotted to the girls, the rest to the boys.

(2) *Closets.*—The closets for the sexes shall be under separate roofs and placed at least 50 feet from the well and the school building, to prevent pollution of the well or the air of the class-rooms. Each closet shall contain a sufficient number of compartments properly lighted and ventilated, and, for the highest grading, each compartment shall be provided with a door. The boys' closet shall be built of glazed brick or similar material, or of wood, painted a dark color and sanded, with a floor of tiles or glazed bricks. Urinals of slate or else lined with zinc or galvanized-iron, shall be provided for the boys. For the highest grading in schools with more than one teacher, there shall be locked compartments for the teachers. Suitable covered walks (cement, flag, or brick preferred) shall be laid from the doors of the school building to the closets, so that the closets shall be accessible with comfort at all seasons of the year, and provision shall be made for keeping the walks free from snow in the winter. A close board fence or a wall, about six feet high, shall be provided between the boys' and the girls' side, from the closet to the school building; and the closets shall be placed at least ten feet distant on each side. The entrance to the closets shall be properly screened (spruce trees in front of each closet) and the doors shall be locked after school hours by the teacher, and opened before school hours by the caretaker. The closets and urinals shall be cleansed and disinfected monthly if possible. Dry earth closets or closets with draw-boxes are to be preferred.

(3) *Water Supply.*—The water supply shall be adequate. There should be a well, (artesian if at all practicable) with a neat pump and platform, of good drinking water, on the school premises, properly protected against pollution from surface drainage or any other source. If a dug well it shall be thoroughly pumped and cleaned out at the close of each vacation and at such other times as may be deemed advisable by the teacher or by the inspector. Graniteware pails, or, for the highest grading, earthenware or graniteware water-tanks with covers, and drinking cups of glass or good enamelled ware shall be provided and kept scrupulously clean. Where there is no well, other provision, satisfactory to the inspector, shall be made for an adequate supply of good water.

(4) *School Building.*—The grading of the school building shall depend upon the character of its site and its construction. The building should have a southern exposure and shall be at least thirty feet distant from the public highway. Its architectural appearance shall be considered, and, for the highest grading, more than merely a plain building shall be required. The entrance shall have a vestibule or covered porch. In schools with more than

one teacher, for the highest grading, there shall be separate entrances, and separate means of egress to the closets at the rear. Where there are two stories, the second floor shall be sound-proofed with mortar, felt, or other suitable material. A school bell (and, in the larger schools, a fire alarm gong) shall be provided, and a flag and flag-pole. Every school should have a basement, at least seven feet high in the clear, ceiled with wood or plaster, and having a pine, hardwood, or (preferably) cement floor. Cordwood shall be well dried before being stored in the basement. Where there is no basement, an adequate woodshed shall be provided, at least 20 feet from the building, of wood, brick, or other suitable material, with proper doors and locks. The wood-work of the shed shall be painted a suitable color.

(5) *Class Rooms.*—The class rooms shall be oblong (length 7 feet more than breadth), and large enough to seat comfortably all the pupils. A superficial floor area of at least 12 (16 preferred) square feet, and a cubic air space of not less than 250 feet shall be allowed for each pupil, the provision being based on the highest attendance. Hardwood should be preferred for all the woodwork, especially for the floors. Except for the floors any material of such quality and grain as would suit for an oil or varnish finish will suit. Suitable color schemes (the ceilings being always white or slightly tinted) should be adopted for the halls and class rooms, which should be painted rather than calcimined. Wood finish, instead of plaster, may also receive the highest grading. If calcimined, the walls must be kept free from dust, and recalcimined when needed. If painted they must be washed down and repainted also when needed.*

Adjustable transoms shall be placed over the class room doors which shall swing outwards either way. At least one waste paper basket shall be provided and the floors shall be kept in good order. A closet or a cabinet shall be provided for utensils used in school work: also a map case and shelving for lunch baskets or lunch pails. As soon as practicable, the class rooms should be decorated with good pictures, casts, vases, and other ornaments. Suitable scrapers and mats shall be placed at the outside doors. In localities where flies are troublesome wire screens should be provided for the doors and windows.

(6) *Teachers' Private Rooms.*—There should be a room for the private use of the teacher or the staff, of suitable size and comfortably furnished.

(7) *Halls.*—The entrances, vestibules and halls shall be roomy and well lighted and shall be so placed as to admit of separate entrances for the sexes to the cap and class rooms. The entrance and vestibule doors shall swing outwards or either way. For the highest grading, in buildings of two stories, there shall be separate stairways for the sexes, easy of access and well guarded. Here, also, suitable color schemes and decorations should be provided.

(8) *Cap Rooms.*—For the highest grading, and in all schools to be erected hereafter, separate cap rooms shall be provided for the sexes. The cap rooms shall be conveniently situated with respect to the class rooms and shall be provided with wash basins and towels and with all the necessary appliances for storing umbrellas and for hanging caps or cloaks. Where there are no cap rooms, there shall be an adequate supply in the class room, of hooks, for caps, cloaks, etc. Curtains should be strung on wires to conceal the clothing.

(9) *Desks.*—Every school house shall be seated with either double or singe desks with movable seats and noiseless joints, such single desks being necessary for the highest grading. The desks shall be fastened to the floor in

*Inspectors and School Boards should consult "School Sanitation and Decoration," by Burrage and Bailey; $1.50; D. C. Heath & Co., New York City

rows facing the teacher's platform, with suitable aisles between the rows and with passages at least three feet wide between the outside rows and the walls of the school room. The desks and seats shall be graded in size to suit the age of the pupils, those of the same size being placed in the same row from front to rear. The pupil when seated, must be able to place his feet fully and easily on the floor. The number of the desks shall be adequate for the number on the roll.

There shall be a suitabe desk and chair in each class room for the use of the teacher, and at least two chairs for visitors. The teacher's desk shall be provided with two drawers or compartments, with lock and key. There shall be a table of suitable size, around which the younger pupils may assemble to do part of their work. Where Chemistry or Physics is taken up in a higher class, a suitable table should be provided for the experiments; and, in such schools, this provision shall be necessary for the highest grading. A sloping stand for the large dictionary shall also be provided.

(10) *Blackboards.*—There shall be one blackboard of good quality, at least four feet wide, extending across the room in the rear of the teacher's desk, with its lower edge not more than two and one-half feet above the floor; and there shall be additional blackboard provision on each of the other sides of the room. Slate is greatly to be preferred and is cheaper in the end; hyloplate will do. There shall also be an adequate supply of blackboard brushes and crayons, the former to hang below the trough. Where there is a platform it shall be from four to five inches high and should extend across the room where practicable. At the lower edge of each blackboard there shall be a trough, covered with wire netting, five inches wide, for holding crayons and brushes. The troughs and brushes shall be cleaned every day.*

(11) *Lighting.*—For the highest grading, the class rooms shall be lighted from the left of the pupils, the lower edges of the windows being on a level with the tops of their heads. Where there are windows in front of the pupils, it is indispensable that they shall be closed up. To admit of an adequate diffusion of light throughout the whole class room, the windows shall be numerous (area, one-fifth or one-sixth of the floor space, where the lighting is good; otherwise a greater area), and of clear (not ground or painted) glass; narrow, with two or four panes each; and running as close to the ceiling and as far to the rear of the class rooms as practicable. They shall begin about five or six feet from the front of the class room. The windows shall also be provided with blinds of suitable color and size. The blinds on the left of the pupils should be semi-transparent; other blinds should be opaque. On dull days, windows in the rear and on the right may be serviceable; but, if the light from the left is adequate, they should not be used at other times.

*The following directions for making a blackboard may be found useful. (Such blackboards, however, are never satisfactory):

(*a*) Where a brick wall is built solid, and also in case of frame buildings, the part to be used for a blackboard should be lined with boards, and the laths for holding the plaster nailed firmly on the boards.

(*b*) The plaster for the blackboard should be composed largely of plaster of Paris.

(*c*) Before and after having received the first coat of color it should be thoroughly polished with fine sand paper.

(*d*) The coloring matter should be laid on with a wide, flat varnish brush.

(*e*) The liquid coloring should be made as follows:—Dissolve gum shellac in alcohol, four ounces to the quart; the alcohol should be ninety-five per cent. strong; the dissolving process will require at least twelve hours. Fine emery flour with enough chrome green or lampblack to give color, should then be added until the mixture has the consistency of thin paint. It may then be applied in long, even strokes, up and down, the liquid being kept constantly stirred.

(12) *Heating.*—The temperature of the class rooms, halls, cap rooms, and teachers' private rooms shall be, as nearly as practicable, 68 degrees. A thermometer shall be provided for each class room. For first-class grading, steam radiators or hot air furnaces are necessary. Where stoves are used, they shall be so placed as to prevent discomfort to any pupil; shall be protected by a jacket of tin, zinc, or galvanized iron; and shall be provided with a strong iron poker, shovel, and pail for ashes. The stove-pipes and the chimneys shall be kept free from soot and dust. Both stoves and stove-pipes shall be polished at least three times a year.

(13) *Ventilation.*—Provision shall be made for an adequate supply of pure air at all times. The foul air shall be removed and the pure air supplied so that there shall be a complete change at least three times an hour. The windows of every school building shall be adjusted by weights and pulleys, and, when the outside temperature permits it, they will provide the necessary change of air. In cold weather the windows may be raised at recess from below and lowered from above, according to the outside temperature; but the necessary constant ventilation cannot be secured by this method. The pure air shall be admitted directly from the outside through sufficient ducts running under the floor and opening below the stove. The pure air supply shall be under control by slides to open or close the ducts. Where steam heating or a hot air furnace is used, the pure air shall be admitted directly from the outside, at a height of about four feet from the ground, to the base of the furnace. In the air space of each furnace or within the jacket of each stove there shall be a pan filled daily with water, so as to furnish the warmed air with the necessary moisture. (Air *shall not* be taken from the school room or from the basement to supply the furnace, except in the morning before school, after which, this source of supply *must* be shut off.)

In all cases the foul air shall be taken away from near the floor and out through ventilating ducts in the chimney, which ducts should be somewhat larger in area than the incurrent pure air ducts. In buildings where ventilating ducts have not been provided in the chimneys, two tin, zinc, or galvanized iron pipes (about six inches by ten inches) should extend on opposite sides from near the floor, connecting below with the class room and running up through the ceiling beside the chimney, and so placed as to to be well heated. Openings, with regulating slides, should also be provided in these ducts near the ceiling for use only when the room is overheated. When needed, a cowl should be placed so as to cover properly the chimney and the excurrent foul air ducts.

Where storm sashes are used on the outside, they shall contain sliding panels in the wood or the panes or shall be hinged at the top to allow the ingress of pure air; or they may be placed on the inside and also hinged at the top. It answers equally well to have double panes of glass about one-half inch apart in the same sash.

Reg. 9 (*Amended*).—The trustees shall appoint one of themselves or some other suitable person to keep the school house and premises and all fences, water-closets, outhouses, walks, windows, desks, maps, blackboards, and stoves in proper condition. It shall be the duty of the teacher to inspect the premises daily and report to such officer without delay any needed repairs. The trustees shall also provide for washing the floors at least quarterly (monthly to be greatly preferred) and for whitewashing, every year during the summer holidays, the walls and ceilings if finished in plaster, or for washing them if finished in wood or steel sheeting and painted; and shall employ a caretaker whose duty it shall be to sweep the floors daily (the windows being then open), to dust daily all the furniture, window ledges, etc., with

damp dusters (preferably in the morning at least an hour before school); to make fires, at least one hour before the opening of school, from the first of November until the first day of May in each year, and at such other times in October and May as the teacher may direct. The duties of the caretaker shall be arranged for and performed satisfactorily to the Inspector.

Reg. 10.—No Public School house or school grounds, unless otherwise provided for in the conveyance to the trustees, shall be used for any other than school purposes without the consent of the trustees, and no advertisements shall be posted in any school room or distributed to the pupils unless approved in the same way.

Reg. 10 (*a*).—Hereafter, subject to appeal to the Minister of Education, all new school sites and all additions to old ones and all plans of new schools or of additions to old ones, and all other proposed school accommodations, shall be approved by the Inspector of Public or Separate Schools (as the case may be), who shall be guided by the instructions contained herein. (*New Regulation.*)

Minimum Equipment.

Reg. 8 (*Amended*).—A globe, not less than nine inches in diameter and properly mounted; a map of the hemispheres; a map of each continent; a map of Canada; a map of Ontario; a map of the county (if a suitable one is published); a map of the British Empire; a map of the British Isles; an atlas or a gazetteer; a standard dictionary for each class room (with English pronunciation); a numeral frame (or an adequate supply of loose cubes); a good clock for each class room, kept in good condition; a set of mensuration surface forms and geometrical solids; a blackboard set for each class room (one protractor, 15½ inches, triangle, 24 inches, a pair of compasses, two pointers, a graduated straight edge); a pair of scales, with weights, to weigh from half-ounce to ten pounds; a set for measure of capacity (pint, quart, gallon); a set for linear measure (inch, foot, yard, tape line); a set for square and cubic measures; a school library of the minimum value of $20.00 for each teacher employed, increased annually after December, 1907, by at least $10.00 until the value for each teacher employed reaches $100.00. A suitable book case shall also be provided.

For a list of books, see Catalogue of Books for Public School Libraries, issued by the Education Department in 1902. In making the selection, the Inspector's approval should invariably be secured. He is directed to strike off the list any unsuitable purchases. Regs. 117, 118, 121, and 122 are hereby cancelled.

Additional Equipment.

Besides the above equipment, which is obligatory in every rural Public and Separate School, the Education Department has issued three other circulars: No. 6*a*. (a list of scientific apparatus suitable for Fifth Form and elementary Continuation Classes); No. 6. (a list of scientific apparatus suitable for advanced Continuation Classes), and No. 6*b*. (a list of equipment for Domestic Science, Construction Work, and School Gardens, in rural schools). From these lists Boards should select, with the approval of the Inspector, such apparatus as may be needed for the work done in the several departments. These lists have been distributed along with this circular, but additional ones may be obtained upon application to the Inspector.

A book in which to record from time to time the value of the equipment will be provided by the Education Department for each rural school before next August.

Summer Schools for Teachers, 1906.

The Education Department has made arrangements for Summer Schools to be held at the Normal College, Hamilton, and at the Normal Schools, Toronto, Ottawa and London. The main purpose of the Schools is to give instruction in the following Departments:—

Manual Training.
Household Science.
Nature Study.
Art.

Classes will be organized so as to enable students (the preference being given to teachers) to take as many as convenient of these departments. Instruction will be given by Specialists in the respective subjects. Any further information required will be obtained by students after the classes are organized. No fees will be required, and it may be presumed that the cost of books, etc., will be slight. The Schools will be organized at 2 p.m., Tuesday, July 3rd, when all necessary information will be given. The session will continue for three weeks. Certificates of attendance will be awarded to those students who show satisfactory proficiency.

Persons who desire to avail themselves of the privileges offered, should make application at an early date not to this Department but to the Principal of the Institution they purpose attending. No special form of application will be needed. (A Summer School is also announced at the McDonald Institute, Guelph, for which information may be obtained from the President.)

May, 1906.

APPARATUS FOR PHYSICS AND CHEMISTRY.

Physics.

High School, Middle School and Advanced Public School Continuation Classes.

The Pieces Marked with an Asterisk Should Form Part of Individual Sets for Students' Use.

Sound.

	Probable Cost.
1 Brass Rod for showing the production of Sound by longitudinal vibrations of rods	See List of Apparatus for Lower School.
1 Whistle	
*1 Coil Spring, about 1 inch in diameter and 2 feet long	
1 Bell in Vacuo	
1 Whirling Machine	
Cardboard Discs for Whirling Machine to Show Reflection of Sound	
1 Toothed Wheel with ring of holes to attach to Whirling Machine to illustrate Pitch of Sound.	
1 Toy Trumpet	
1 Clamp for Vibrating Plates	$1 00
2 Brass Plates, one square, one circular	2 00

		Probable Cost.
1	Sonometer	$5 00—10 00
1	Violin Bow	0 75
*1	Tuning Fork-A	0 25
2	Tuning Forks-C, mounted on Resonance Boxes	8 00
1	Small Chain	0 15
1	Wave Machine	5 00
1	Jointed Tin Tube, 3 metres long, 10 cm. in diameter, with one end tapered to a diameter of 2.5 cm.	
2	Large Concave Mirrors for Reflection of Sound	2 50
1	Large Toy Balloon for showing Refraction of Sound	
1	Interference Apparatus	5 00
1	Siren (optional)	$6 75—30 00
*	Glass Tubes of various sizes and lengths for showing Vibrations of Air Columns	1 50
1	Organ Pipe with Glass Front	2 50
1	Tambourine to use with the above	0 50
1	Manometric Flame Apparatus	10 00

Heat.

See List of Apparatus for Lower School.

Light.

*1	Cardboard Screen with frame	See List of Apparatus for Lower School.
1	Reflection of Light Apparatus, to be fitted also for Reflection of Sound	
*1	Plane Mirror (small)	
1	Plane Rectangular Glass Tank, to be used also as Pneumatic Trough	
1	Port Lumiere	$10 00—25 00
	or Projection Lantern	$25 00—100 00
1	Optical Bench and Photometer, complete with Concave and Convex Mirrors and Set of Demonstration Lenses	$7 50—20 00
1	Refraction Tank	3 50
1	Rotating Mirror, mounted on stand	4 00
2	60° Glass Prisms	2 00
1	Focusing Lens, large, mounted on stand	3 00
1	Colour Wheel for re-Composition of Light	1 50

Electricity and Magnetism.

*2	Bar Magnets	See List of Apparatus for Lower School.
*1	Horse Shoe Magnet	
1	Compass	
*1	Bar Soft Iron (round, 6 inches long)	
*1	Sheet Zinc and Sheet Copper (Pair Elements)	
*1	Galvanoscope, complete	
4	Dry Cells	
1	Spool Double Covered Magnet Wire, No. 20, to be used for making Electro-Magnets, etc.	
1	Small Incandescent Lamp (3 volts)	
1	Dipping Needle	$ 2 50
1	Electric Bell	1 00

	Probable Cost.
1 Astatic Pair of Magnetic Needles	$0 50
Strips of Zinc, Copper, Carbon, Iron, Lead and Platinum to be used in constructing the various forms of cells	.....
1 Water Voltameter	2 00
1 Copper Voltameter	2 00
1 U-Shaped Tube on stand	1 00
2 Coils with Mercury Commutator, for showing Laws of Currents complete	.....
1 Set of Telegraph Instruments	5 00
1 Astatic or D'Arsonval Galvanometer	10 00
1 Tangent Galvanometer	$3 50—10 00
1 Apparatus for showing the Laws of Current Induction and Illustrating the Action of the Dynamo and the Motor	25 00
1 Arc Lamp, Simple Regulator	5 00
1 Wheatstone Bridge	25 00
Instead of the above a Metre Sliding Bridge may be used	$5 00—15 00

Mechanics and Hydrostatics.

High School, Upper School and Advanced Public School Continuation Classes.

1 Apparatus to Determine Acceleration Due to Gravity	$ 5 00
1 Set of Apparatus to Illustrate Forces Acting at a Point—Parallelogram of Forces, Triangle of Forces, Polygon of Forces, etc., complete	20 00
1 Set of Apparatus to Illustrate Parallel Forces and Moments including Levers and different forms of Balance, etc., complete	10 00
1 Set of Apparatus to illustrate Centre of Gravity and Equilibrium of a Body	5 00
1 Set of Apparatus to Illustrate Laws of Friction	5 00
1 Apparatus for Demonstrating Laws of Fluid Pressure	See List of Apparatus for Lower School.
1 Whole Pressure Apparatus	
1 U-Shaped Tube, Large	
1 Barometer, Graduated and Filled	
1 Air Pump. See List of Apparatus, Part 1	
1 Lift Pump, Glass Model	
1 Force Pump, Glass Model	
1 Hydraulic Press, Glass Model	

Chemistry.

High School, Middle School and Advanced Classes in the Public School Continuation Classes.

The items marked with an asterisk are indispensable. When there are two asterisks, at least one of the articles should be provided.

Apparatus.

	Probable Cost.
*1 Blast Lamp, with Blower, where gas is available	$8 00 to $10 00
or, for kerosene or gasolene	5 00

		Probable Cost.
*2	Bunsen Burners, if gas is used.....each	$0 50 to $0 75
	or, 2 alcohol lamps, 4 oz. copper.....each	0 40
1	Blowpipe (mouth) ..... each	0 25 to 1 00
*½	doz. Test tubes, 8 in. x 1 in.....	0 60 per doz.
½	doz. Test tubes, 5 in. x ¾ in.....	0 25 "
*1	doz. Test tubes, 4 in. x ½ in.	0 15 "
**2	U Tubes, 6 in. x ¾ in. .....each	0 10
3	Beakers, 2 oz. ..... each	0 10
*3	Beakers, 4 oz. .....each	0 20
3	Beakers, 8 oz. ..... each	0 30
*1	lb. glass tubing, soft ⅛ in. to ¼ in.....	0 60
1	lb. glass tubing, hard ½ in. dia.	1 00
*	or 1 doz. combustion tubes 8 in. x ½ in., hard.....	0 60
2	Tubes 18 in. x ½ in. closed at one end.....each	0 10
2	Gas jars 18 in. x 2½ in. .....each	0 85 to 1 00
*3	Flasks, 250 cc, necks ¾ in. diam.....each	0 20
**3	Flasks, 500 cc, necks 1 in. diam.....each	0 25
3	Funnel (Thistle) tubes, 10 in. .....each	0 10
**3	Funnels, 3 in. ..... each	0 15
1	Tube 2 in. x 18 in., open .....each	0 15
*1	Eudiometer, graduated to 1-5cc, 50cc,.....	2 00
*1	Burette, graduated to 1-5cc, 50cc,.....	1 00
*1	Retort, stoppered, 4 oz.....	0 25
1	Retort, stoppered, 8 oz.....	0 35
2	Pipettes, 1 curved	0 15
*1	Measuring Glass, graduated to cc, 100cc.....	0 75
1	Thermometer, chemical	0 50 to 1 00
*1	Lamp Chimney, large	0 10
**2	doz. bottles, stoppered, narrow, 2 oz.	1 00 per doz.
1	doz. bottles, stoppered, wide, 2 oz.....	1 00 "
3	doz. bottles, cork, narrow	0 30 "
1	doz. bottles, cork, wide, 4 oz.	0 30 "
*½	doz. Pickle bottles, or pt. Preserve Jars.....	0 30
*1	Electrolytic Apparatus.....(See list of Physical Apparatus)	
3	Winchesters, ½ gal. bottles for gas storage.....each	0 25
*3	Rubber stoppers, 2 holes, ⅛ in. small end.....each	0 10
3	Rubber stoppers, 1 hole, ⅛ in. small end.....each	0 08
*2	yds. Rubber Tubing, 3-16 in. inside, red.....	0 10 per ft.
2	yds. Rubber Tubing, ¼ inside, red	0 12 "
**2	Pinch cocks, medium.....each	0 20
*1	Set cork borers, ⅛ in.—¼ in.	
1	Piece Platinum wire No. 32, 1 ft.....	0 80
*4	Dry cells ....each	0 30
*10	ft. silk covered copper wire, No. 24	0 15
*†1	Induction coil, small.....(See list of Physical Apparatus)	
*1	sq. ft. wire gauze, brass, fine	0 50
*	Pieces mica	0 10
	Pieces stove pipe iron	
*1	Retort stand, 3 rings.....	1 25
*1	Clamp stand	1 50
*	Blocks for stands	
1	Balance to weigh with set weights.....	12 00 to 20 00

†A Friction Electric Machine may be used with the Eudiometer instead of cells and coils.

	Probable Cost.
*1 Package picture wire	$0 10
*1 Copper retort for oxygen	2 50
3 Test tube brushes ..... each	0 10
1 Spool soft iron wire	0 10
1 Mortar and pestle, 4 in.	0 50
1 Pair iron forceps (tongs), 6 in.	0 50
1 Pair pliers, wire cutting	0 60
*2 Files, one round, one triangular .....each	0 15
*4 Soup plates	0 20
*2 doz. corks, assorted	0 10
*1 Package filtering paper, circles, 6 in.	0 25
*½ doz. sheets Litmus paper	0 30
* Candles	0 10

CHEMICALS.

*Zinc, granulated, 1 lb.	0 20
Lead clippings (sheet)	0 20
*Copper Clippings (sheet or wire), 1 lb.	0 50
*Iron filings, 1 lb.	0 05
Antimony, metal, 1 oz.	0 15
*Magnesium, wire or ribbon, ½ oz.	0 40
*Charcoal	0 25
Coal, pieces of hard and soft	
*Mercury, 1 lb.	1 00
*Sodium, 1 oz.	0 25
*Potassium, 2 drams or 1 oz.	0 25 dr., 1.50 oz
Litharge, 2 ozs.	0 05 oz.
*Red Lead, ¼ lb.	0 40 per lb.
*Oxide of Mercury, red, 1 oz.	0 25
*Oxide of Copper, 1 oz.	0 15 oz.
*Ferric Oxide (iron rust, dried)	
*Manganese Dioxide, ½ lb.	0 10
*Barium Dioxide, 2 ozs.	0 10 oz.
Calcium Oxide, (lime, lumps)	
Arsenious Oxide, 2 ozs.	0 15 oz.
*Sodium Hydroxide, 4 ozs., 1 lb. in bottle	0 75, 0 25
Phosphorus, yellow, 2 ozs.	
Phosphorus, red, 1 oz.	
Potassium Hydroxide, 1 lb. in bottle	0 75
*Potassium Iodide, 1 oz.	0 30
Potassium Chlorate, 1 lb.	0 25
Potassium Chloride, 1 lb	0 40
Potassium Nitrate, ½ lb.	0 40, 0 20
Potassium Sulphate, ¼ lb.	0 50 per lb.
Potassium Bichromate, 2 ozs.	0 10 oz.
Potassium Ferrocyanide, 2 ozs.	0 10 oz.
Potassium Permanganate, 2 ozs.	0 15
*Sodium Nitrate, 1 lb.	0 40
*Sodium Chloride, 1 lb.	0 05
Barium Chloride, ¼ lb.	0 20
Barium Nitrate, ¼ lb.	0 20
*Calcium Chloride, lumps	
*Iron Sulphate, 1 lb.	0 30

	Probable Cost.	
*Iron Sulphide, 1 lb.	$0 15	
Mercuric Chloride, 1 oz	0 25	
*Ammonia Solution, 1 qt.	0 30	
*Ammonium Nitrate, 1 lb.	0 30	
*Ammonium Chloride, ½ lb.	0 30	
*Ammonium Carbonate, ½ lb.	0 30	
*Silver Nitrate, 1 oz.	0 80	
*Copper Sulphate, 1 lb.	0 10	
*Calcium Carbonate, lumps of limestone, calcite, chalk, animal shells		
*Carbon, specimens of coal, charcoal, graphite, lampblack, animal black, soot, ¼ oz. each	0 30	
Magnesium Sulphate 1 lb.	0 10	
Magnesium Oxide, 2 ozs.	0 25	
Litmus, 1 oz., lumps	0 15	
Turmeric, 1 oz., powder	0 10	
*Iodine, 1 oz.	0 50	
*Starch, 2 ozs.	0 05	
*Indigo, 1 oz.	0 25	
*Logwood, extract, 1 oz.	0 10	
Aniline Violet (magenta), 1 dram	0 15	
Carbolic Acid, 2 ozs.	0 10	
*Turpentine, 4 ozs.	0 10	
Benzene, 4 ozs.	0 10	
Gasolene, 4 ozs.	0 10	
*Paraffin (white wax), 1 lb.	0 15	
*Sulphur, powder, 1 lb.	0 10	
*Sulphuric Acid, 10 lbs.	0 05	per lb.
*Nitric Acid, 2 lbs.	0 05	"
*Hydrochloric Acid, 2 lbs.	0 05	"
*Oxalic Acid, 1 lb.	0 40	
*Pumice Stone, lumps, ½ lb.	0 10	
*Sodium Carbonate, 1 lb.	0 05	
Plaster of Paris	0 10	

Upper School, High School and Advanced Public School Continuation Classes.

APPARATUS.

½ doz. hard glass test-tubes, 8 x 1 inch.
1 doz. hard glass test-tubes, 5 x ¾ inches.
1 doz. hard glass test-tubes, 4 x ½ inches.
3 Porcelain crucibles with covers.
3 Evaporating dishes, glazed, 2-3 inches.
3 Beakers, glass, ½ litre.
3 Flasks, 1 litre, with two holed rubber stoppers.
1 Sand Bath.
1 Water bath.
1 Funnel with stopcock.
2 Chemical Thermometers.
2 Burettes with pinchcocks.
1 Clamp stand.

1 Tripod stand.
2 Gas jars, 1 litre, with ground rims, glass covers.
½ doz. combustion tubes.
1 lb. hard glass tubing.
1 Lead dish, 2 x 3 inches.
2 doz. Reagent Bottles, 2 ozs.
1 doz. Reagent Bottles, 4 ozs.

JUNE, 1906.

LIST OF APPARATUS.

For the Experiments in the Elementary Science of the Public School Fifth Form and Continuation Class Courses, and of the Lower School of the High School.

		Probable Cost.
1	Metric Scale, one foot long. The ordinary school rulers graduated in inches and centimeters will answer	$ 0 02
1	Meter Stick	0 50
1	Caliper, Simple form	0 50
1	Dissected Litre Block	2 00
1	Pinch-Cock	0 15
1	Burette, Mohr's, 50 C.C. graduated in tenths	2 00
1	Measuring Cylinder, 100 C.C. graduated	0 80
3	Beakers, different sizes	0 55
1	Air Pump and Receiver	10 00
1	Elastic Rubber Balloon. A toy balloon answers well	0 10
1	Pendulum Bob	0 25
1	Physical Balance, with set of Metric Weights	8 50
1	Spirit Lamp or Bunsen Burner	0 40
1	Spring Balance	0 50
1	Glass Battery Jar, 9 in. deep, 8 in. diam.	0 50
1	Mortar and Pestle	0 35
2	Thistle Tubes Each 15...	0 30
1	Transmission of Pressure Apparatus	0 75
1	Archimedes Principle	1 75
1	Globe for Weighing Air	3 00
1	Barometer Tube, heavy glass	0 50
1	Mariotte's Law Tube	1 50
1	Lift Pump, Glass Model	1 25
1	Force Pump, Glass Model	1 25
1	Hydraulic Press, Glass Model	2 00
1	Filter Funnel	0 10
1	Retort Stand (two rings)	0 50
3	Small Florence Flasks with perforated rubber corks to fit	0 45
1	Florence Flask with wide mouth	0 25
1	Rubber Cork with two holes to fit Florence Flask with large mouth	0 15
1	Hydrometer Jar	0 45
1	Porous Cup	0 70
1	Specific Gravity Bottle	0 75
1	Weighted Wooden Prism, 1 square centimeter in section	0 25
1	Tuning Fork, simple form	0 20
1	Brass Rod for showing the production of Sound by longitudinal vibrations of rod	0 30

		Probable Cost.
1	Whistle	$0 10
1	Coil Spring, about 1 in. in diameter and 2 feet long	0 25
1	Bell in Vacuo	1 50
1	Glass Tube about 2 cm. in diameter and 30 cm. long	0 15
1	Glass Tube about 3 cm. in diameter and 50 cm. long	0 30
1	Whirling Machine	3 50
	Cardboard Discs for Whirling Machine to show reflection of sound	0 50
1	Toothed wheel with ring of holes to attach to Whirling Machine to illustrate pitch of sound	2 00
1	Spool Piano Wire	0 10
1	Toy Trumpet	0 10
1	Ball and Ring	1 00
1	Compound Bar	1 00
1	Thermometer, graduated in both Centigrade and Fahrenheit Degrees	1 00
1	Differential Thermometer	2 50
1	Calorimeter	2 00
1	Conductometer	1 50
1	Cardboard Screen with frame	0 50
1	Reflection of Light Apparatus to be fitted also for reflection of sound	3 00
1	Plane Mirror (small)	0 25
1	Convex Lens (Reading Glass will answer)	0 50
1	Triangular Glass Prism	0 50
	Pieces of Red, Green and Blue Glass	0 10
	Lodestone (small piece)	0 50
2	Bar Magnets	0 50
1	Horse-shoe Magnet	0 25
1	Compass	0 25
1	Bar Soft Iron, Round, 6 in. long	0 20
	Sheet Zinc and Sheet Copper (Pair Elements)	0 15
2	Dry Cells Each 35	0 50
1	Spool Double-Covered Magnet Wire, No. 20, to be used for making Electro-Magnets, etc.	0 30
1	Small Incandescent Lamp (3 volts)	0 25
1	Pneumatic Trough	0 40
4	Glass Bottles, (Pickle bottles will answer)	0 10
4	Glass Slips, 2 inches square to cover mouth of bottles	0 05
3	Soup Plates	0 20
3	Hard Glass Test Tubes	0 30
1	Test Tube Rack	0 25
4	Reagent Bottles 4 ozs.	0 50
½	doz. Test Tubes, 5 in. x ¾ in. per doz.	0 25
1	Doz. Test Tubes, 4 in. x ½ in. per doz.	0 15
2	U-Tubes, 6 in. x ¾ in. each	0 10
1	lb. Glass Tubing, (soft) ⅛ in. to ¼ in.	0 60
1	Retort, stoppered, 4 oz.	0 25
1	Lamp Chimney, (large)	0 10
1	Electrolytic Apparatus	1 25
2	yds. Rubber Tubing 3-16 in. inside, red per ft.	0 10
	Pieces of Mica	0 10
1	Package of Picture Wire	0 10
2	Files, one round, one triangular each	0 15
2	Doz. Corks, assorted	0 10
1	Package Filtering Paper, Circles, 6 in.	0 25
	Candles	0 10

		Probable Cost.
½ Doz. Sheets Litmus Paper		$0 30
1 Sq. ft. Sheet Rubber	per sq. ft.	0 25
Wire Gauze		0 15
Sealing Wax	large stick	0 25
1 Small Vise for clamping wires		0 40

Chemicals.

Zinc, granulated, 1 lb.		0 20
Copper Clippings (sheet or wire) 1 lb.		0 50
Iron Filings, 1 lb.		0 05
Charcoal, (may be had from plumber)		0 25
Coal (pieces of hard and soft)		
Mercury, 2 lbs.		2 00
Sodium, 1 oz.		0 25
Potassium, 2 drams	dram	0 25
Oxide of Mercury, red, 1 oz.		0 25
Oxide of Copper, 1 oz.		0 15
Manganese dioxide, ½ lb.		0 10
Calcium oxide, (Lime, lumps)		
Sodium hydroxide, ¼ lb.		0 25
Potassium chlorate, 1 lb.		0 25
Potassium nitrate, 4 oz.		0 10
Potassium permanganate, 2 oz.		0 15
Calcium chloride (lumps)		
Ammonia solution, 8 oz.		0 10
Ammonium nitrate, 4 oz.		0 10
Ammonium chloride, 6 oz.		0 10
Calcium carbonate, lumps of limestone, calcite, chalk, animal shells		
Carbon, specimens of coal, charcoal, graphite, lampblack		
Sulphuric acid 1 lb.		0 05
Nitric acid, 1 lb.		0 05
Hydrochloric Acid, 8 oz.		0 05
Yellow Phosphorous, 1 oz.		0 05

Botany and Zoology.

For the work in Botany and Zoology it is desirable that each Pupil should have a pocket magnifier (30-50 cents). A compound microscope ($11.00) should also form part of the school equipment for this work. These, together with a dozen glass slips and cover glasses, and a couple of needles mounted in wooden handles will be found to be all that is necessary for the course. Breeding cages for observing the development of insects may be made from waste crayon boxes or soap boxes by covering one side or end with mosquito netting or a pane of glass.

General.

A small cupboard should be provided for storing apparatus and chemicals, and a simple laboratory table for carrying out experiments. The table should be kept for this use alone where there is no laboratory.

June, 1906.

RURAL SCHOOLS.

Equipment for Domestic Science, Constructive Work and School Gardens.

Domestic Science.

2	Granite saucepans, No. 10	$0 30
2	" " (two sizes larger)	40
1	Granite dishpan, eight quart size	35
1	Tin pudding dish	20
1	Tea-kettle, flat bottom, No. 6	60
1	Stewpan, straight sided, quart size	20
3	Bowls, white soup bowls, No. 12, each	05
3	Plates, dinner size, white, No. 22, good quality	25
	(the above are to be good quality granite)	
1	Dover egg beater	10
1	Egg beater	05
2	Measuring cups, marked in 1-4, 1-3	10
1	Grater	05
1	Small steamer, and kettle to fit	50
1	Cake tin, 8 x 5 x 2 in.	20
1	Strainer or Sieve	15
1	Towel rack. 4 leaved screen shape, cheaper one would do	50
1	Meat board, hardwood, 10 x 12 in., 1 in. thick	15
3	Wooden spoons	15
2	Mixing bowls, 1 and 2 quart size	50
1	Jug, 1 quart size	20
2	Salt and pepper shakers (one each)	25
1	Tea-pot, pint size, Brown Globe	20
6	Pint fruit jars, for holding supplies	30
1	Lemon reamer	10
1	Crock, for garbage, with cover	25
3	Frying pans, Acne, size 00, (1 would do if teacher does cooking).	15
1	Can opener	10
6	Teaspoons	25
3	Tablespoons	25
6	Knives and forks, 3 forks would do	75
3	Paring knives (2 would do)	30
1	Spatula	30
1	Rolling pin	15
1	Pastry board	25
6	Dish towels	75
3	Dish cloths	15
3	Scrub cloths	15
3	Dusters	15
1	Blue Flame stove. two burners. improved make, with oven	8 60
	(or single coal oil stoves, $1.00 each, but these are not so good)	

Additional equipment desirable, but not essential.

1	Kitchen table with drawer, might use table in room	2 50
1	Flour box	45
6	Cups and saucers (fewer would do)	50

6 Medium size plates (fewer would do)	$0 40
1 Jug, 1 pint size	15
1 Carving knife and fork	1 00
1 Pair scissors	25
Miscellaneous. Soap dish, hammer, cork screw, floor cloth, salt box, thermometer, wire strainer, dust pan, clock, etc., about	2 00

The above list gives an approximate cost of a very simple equipment, but one with which good work could be done, and some individual work, say, three pupils working together. The kitchen table could be fitted with a framework underneath with doors, in which the utensils could be kept when not in use, and locked so as to prevent pupils tampering with them. The teacher may omit or add to the above as the requirements of the special case may demand. Table setting and serving may be taught on the kitchen table, when a tablecloth and sufficient dishes may be borrowed for the occasion, if considered too expensive to purchase.

The cost might be reduced to about $12.00.

Attention should also be paid to needlework. The equipment for this is generally owned by each girl: scissors, rule, needle and thimble being all that is really necessary. When cutting out is done any flat top table may be used.

Constructive Work.

25 Pairs of scissors, 5 inches	$5 00
6 Knitting needles	30
24 Pencil compasses	2 00
6 Ticket punches	1 50
24 Mill boards, 12 inches x 12 inches	1 00
24 Rulers	1 25
25 Pencils	50

A box or tray should be provided to keep the above equipment when not in use. By arranging that all the classes shall not work at the same time, the equipment may be made to serve a large number. Most children will have rulers and pencils of their own, and, if necessary, they could be asked to bring scissors from home. The knitting needles are for "scoring." They should be broken in two and the broken end thrust into whittled wooden handles making twelve scoring points. The mill boards are for protecting the tops of the desks, but sheets of newspaper may be substituted where it is desirable to reduce the expense. The scoring points may be used instead of punches, or a stout wire nail will make a very satisfactory hole through paper or thin cardboard. Brown paper, old copy book covers, and cardboard boxes may all be utilized in this work, thus reducing the expense for material.

For clay modelling, all the equipment that is necessary is an earthenware crock in which to keep the clay. It should be covered by a damp cloth and sheets of newspaper. There should also be some brown paper or oilcloth to cover the desks.

School Gardens.

Individual plots should vary from six feet square to six feet by ten according to the age and capacity of the pupil. If the plots are larger two pupils should work together. Twenty feet square is a convenient size for class plots in which experimental work with potatoes, corn, clover, cabbage, tomatoes, etc., may be conducted. In the larger schools two hours per week will be required, while in the smaller, one hour will suffice. There should

be a garden shed about ten by twenty feet for storing tools and carrying on work not suitable to the class room, such as analysis of soils, selecting seeds, making labels, potting plants, etc. (See Minister's Report, 1904, page xxx.)

Implements.

12	Six-inch light weeding hoes	$3 50
12	Ten-inch steel rakes, light, ten-tooth	4 50
18	Claw hand-weeders	1 35
2	Light (flat) short-handled shovels	1 50
2	" " spades	1 50
1	" " digging fork	75
3	Transplanting trowels	50
1	100-foot garden line and reel	90
1	50-foot tape line	50
1	Wheel-barrow	2 50
1	Lawn mower	3 75
1	Spray pump	3 50
1	Light hatchet	50
1	Light hand saw	1 00
1	Two-foot rule	25
1	Try-square	40
1	Small plane	75
1	Flat file	15

The foregoing equipment is the minimum for a school of 25 to 30 pupils. The number of hoes, rakes and hand-weeders might each safely be put at one for every two pupils in average attendance. For average school the cost need not exceed $25.

Vegetable Seeds.

1 peck improved variety of potatoes; 1 lb. beans, 2 varieties; 1 lb. sugar corn, 2 varieties; 1-4 lb. beets, 2 varieties; 1 oz. carrots, 2 varieties; 1-2 oz. seed onion, 2 varieties; 2 oz. radish, 2 varieties; 1 oz. lettuce, 2 varieties; 1 oz. parsnip; 1 oz. turnip; 1 pkt. cucumber; 1 pkt. cress; 1 pkt. kale; 1 pkt. kohl rabi; 1 pkt. summer savory; 1 pkt. sage.

The following to be started in a hot-bed or window box: 1 pkt. cauliflower; 1 pkt. Brussels sprouts; 1 pkt. celery; 3 pkts. cabbage, 3 varieties; 3 pkts. tomato, 3 varieties. Estimated cost.....$2 00

Flowering Annuals.

To be started indoors or in hot-bed: 3 pkts. aster, mixed or 3 named varieties; 2 pkts. balsams, mixed; 2 pkts. dianthus (pinks); 1 pkt. pansy; 1 pkt. petunia; 1 pkt. portulaca; 2 pkts. phlox Drummondi grandiflora; 1 pkt. Ricinus (Castor bean); 1 pkt. scarlet sage; 1 pkt. salpiglossis; 1 pkt. sweet scabious; 1 pkt. ten-week stocks; 1 pkt. verbena.

For open planting: 1-2 oz. sweet alyssum; 1-2 oz. candytuft; 1-2 oz. migonette; 2 pkts. dwarf nasturtium; 2 pkts. Eschscholtzia (California poppy); 2 pkts. Shirley poppy; 1 pkt. double mixed poppy; 1 pkt. tall nasturtium; 1 pkt. mixed sweet peas; 1 pkt. double hollyhock (biennial); 1 pkt. Russian sunflower. Estimated cost $2 00

JULY, 1906.

MODEL SCHOOLS AND THIRD CLASS CERTIFICATES.

In view of the scarcity of Public School teachers and the probability that it will become still greater during the first session of the new Normal School system which will go into operation in September, 1907, the Education Department has authorized the following modifications of the existing Regulations in regard to Model Schools and Public School teachers' certicates:

A County Board of Examiners may admit to the Model School--

(1) Candidates holding Junior Teachers' certificates, who will be eighteen years of age on or before the reopening of the rural Public Schools for the second half of 1907; and

(2) Candidates who will be eighteen years of age on or before September 1st, 1906, and who have failed at the Junior Teachers' examination but whose marks warrant the County Board in presuming that, after further study, they will be able to pass the Junior Teachers' examination of 1907.

The professional certificates shall not be issued in either of the above cases until the candidates comply with the present legal requirements as to age and non-professional standing.

August, 1906.

MEMORANDUM.

Courses of Study and Examinations.

The revised Regulations of 1904, regarding the courses of study and the requirements for the Departmental examinations [see Regulations 43 (3), 46, 47, and 48], are now in full force, except as follows:

(1) As in 1905 and 1906, no examination will be held in 1907 in the subjects of Part 1 of the Junior Teachers' or District Certificate course; but no candidate will be admitted to any County Model School or other training school who does not furnish a statement from the Principal of the school attended, to the effect that the holder has completed satisfactorily the full course prescribed for Part 1.

(2) Candidates who have already passed in one part of the Senior Teachers' examination under the regulations in force in 1905 and 1906 [see Reg. 50 (4)], with or without the Physics prescribed for such examination, must complete at one other examination the list of subjects as prescribed for Parts I. and II. in Regulation 47. For such candidates at the examination of 1907 the pass standard will be 34 per cent. of each paper and 50 per cent. of the aggregate of marks for the papers taken.

In the case of the Mineralogy, the Geometry, and the Mediæval and Modern History of the Upper School, the Department examiners will, as heretofore under similar circumstances, be instructed to bear in mind, when setting the papers therein, that the courses in these subjects will be taken up for the first time in the schools during the coming session. The details of these courses are given on pages 71 and 72, and in appendices C. and D. of the Regulations. The same consideration will be shown in the case of the Biology of the Upper School and the Geometry of the Middle School.

Text-Books.

The list of text-books authorized in August, 1905, for use in the Public Schools, High Schools and Collegiate Institutes, and County Model Schools, will remain unchanged until further notice. Revised editions of books now on the list cannot be used.

The text-books for the Normal College and the Normal Schools will be announced to the students at the beginning of the session. No Teachers' Reading Course is prescribed for 1907.

August, 1906.

SENIOR TEACHERS' EXAMINATION.

Special Provisions for Public School Teachers.

Regulation 47.—The subjects of examination shall be those prescribed for the Upper School of the High Schools, and the examinations may be taken at one time or in two parts at different times, as follows:—

Part I.—English Composition and Rhetoric, English Literature, Mediæval History, Algebra, Geometry, Trigonometry, and Physics.

Part II.—History (Modern and British), Biology, Latin, with Chemistry and Mineralogy, or French and German, or Greek and German, or Greek and French.

Regulation 47 (above) is amended by the following addition:—

Section I.—The Senior Teachers' examination may be taken in four parts at different times, as follows:—

Part I.—English Composition and Rhetoric, Algebra, Geometry;

Part II.—English Literature, Mediæval History, Trigonometry;

Part III.—Modern and British History, Latin, Physics;

Part IV.—Biology with Chemistry and Mineralogy, or French and German, or Greek and German, or Greek and French;

provided always that candidates take at least three of the four parts while actually engaged in teaching, and that they pass a practical examination in addition to the examination in the papers in Biology, Chemistry and Mineralogy.

Section II.—(1) Candidates qualified under section 1 preceding, who have failed in one subject at an examination in one of the parts, but who have made 40 per cent. of the marks on each of the other two subjects and 60 per cent. of the total on said two subjects, may carry over to the examination in a part subsequently taken, the examination on the subject in which they have failed.

(2) Candidates qualified under section 1 preceding, who obtained Junior Leaving standing not later than 1900, may substitute for the course prescribed in Latin for the Senior Teachers' examination, the following courses in English Literature and the History of the English Language and Literature:—

I. English Literature—

Familiarity with and intelligent appreciation of the following texts:—

Chaucer:—The Prologue; Spenser:—The Faerie Queene—Book I.; Milton:—Paradise Lost—Book I., L'Allegro and Il Penseroso; Pope:—The Rape of the Lock—The Prologue to the Satires; Goldsmith:—The Traveller, The Deserted Village; Wordsworth:—Ode on Intimations of Immortality.

The Reverie of Poor Susan, Lucy Gray, Hart-leap Well, Lines composed a few miles above Tintern Abbey, Yarrow Unvisited, Yarrow Visited, Yarrow Revisited; Tennyson:—In Memoriam (one paper).

II. The History of the English Language and Literature—

A Brief History of the English Language—By O. F. Emerson (The Macmillan Co.)

The History of English Literature as developed in the lives of the following in *The English Men of Letters Series*: Chaucer, Spenser, Milton, Pope, Goldsmith, Wordsworth, Tennyson (one paper).

September, 1906.

COURSES FOR COMMERCIAL AND ART SPECIALISTS.

Regulation 52.—Any person who passes the examination in the subjects set forth in Circular No. 2—Courses for Commercial and Art Specialists—(each paper being valued at 100, and the standard being 40 per cent., in each and 60 per cent. of the aggregate, with 75 per cent. in honours), and who is holder of a High School Assistant's certificate, shall be entitled to an Interim Commercial or Art Specialist's certificate.

After the examinations of 1905 the following shall be the details of each course.

I. COMMERCIAL COURSE.

I. Book-keeping.

Theoretical Book-keeping.—Single and double entry; general merchandising, commission business, manufacturing; single proprietor, partnership and corporation accounting, and changing from one form of ownership to another; plant, labor, material, and departmental accounts; practical treatment of such accounts as bank, discount, freight suspense, bad debts, depreciation, etc., columnar cash books, journals, etc., and the various forms of books necessary for the different kinds of business; manufacturing, trading, and profit and loss accounts, balance sheets; statements of income and expenditure, and of receipts and disbursements. (One paper).

Practical Book-keeping.—Making the proper records and financial statements from given data. This may take the form of separate questions and problems, or of a set covering a certain period of time. (One paper).

II. Penmanship.

Theory and practice of penmanship; position and movement; principles of letter formation; graceful, legible business writing; ledger headings, figures, marking and engrossing. (One paper).

III. Mercantile Arithmetic.

Interest, discount, annuities certain, sinking funds, formation of interest and annuity tables, the application of logarithms, stocks and investments, partnership settlements, partial payments, equating or averaging accounts, exchange, practical measurements, and the metric system. (One paper).

IV. General Commercial Knowledge.

Business Papers. Receipts, releases, promissory notes, chattel notes, lien notes, instalment notes, drafts, bills of exchange, orders, due bills, deposit slips, cheques, bank drafts, draft requisitions, deposit, receipts, bank pass books, bills, invoices, credit invoices, accounts, monthly statements, warehouse receipts, bills of lading, freight bills, proxies, power of attorneys, agreements, bonds, debentures, leases, instalment scrips, stock certificates, stock transfers.

Business Laws, Banking, etc.—Negotiable paper, indorsement, acceptance, discharge, dishonor, protest, negotiability and assignability, accommodation paper, statute of limitations, statute of frauds, interest, money, payments, collection of accounts, partnership, joint stock companies, insurance; liability as partner, shareholder, director, agent, indorser, etc.; contracts—kinds, parties to, consideration, etc.; property, real and personal; mortgages, chattel and real estate; guarantee and suretyship; shipper and carrier; mechanics' lien; landlord and tenant—rights, duties and liabilities; principal and agent—relation to each other and to third parties; master and servant—relations, rights, duties and liabilities; wills and succession duties; copyrights, trade marks, industrial designs, patent rights—purpose and legal requirements; banking—organization, business, note issue, redemption fund, crossed cheques, etc.; balance of trade—meaning and effect on an exchange.

Statutory Requirements. Relating to companies, partnerships, insolvency, and winding up acts. (One paper).

V. Auditing.

Object, scope, and advantages of an audit; preliminary steps; instructions to the book-keeper before an audit; continuous and complete audits; relation to prior audits; vouchers; trial balances and balanced books; individual, partnership, and company ownership; methods of accounting; different classes of audits, as commercial, mining, financial; valuation and verification of assets and liabilities; depreciation, discounts, bad and doubtful debts, reserve funds, etc.; preliminary expenses, directors' fees, etc.; foreign exchange; nature of profits; forms of accounts and balance sheets; auditors' reports, recommendations and certificates. (One paper).

VI. Economics.

The principles of production, distribution, exchange and consumption; value and price; land, labor and capital; rent, wages, and interest; monopolies, etc. (One paper).

VII. Stenography.

Theory.—The principles of Phonography by Isaac Pitman.

Practice.—Writing from dictation at a speed of sixty words per minute, and accurate transcription into long hand at a speed of twelve words per minute; the dictated matter to comprise business correspondence and legal documents. (Two papers).

VIII. History of Commerce and Transportation.

Ancient and mediæval commerce; commercial significance of the great geographical discoveries of the fifteenth century; the Dutch commercial ascendancy; struggle of the English, French, and Dutch for the first place in commerce; the English industrial revolution; commercial significance of the Napoleonic wars; England's industrial and commercial supremacy; French industry and commerce since the overthrow of Napoleon; the German Empire and its commercial position; recent economic growth of Russia; the Balkan States, and the commercial position of South America, Africa, Asia and Oceania. The growth of commerce and the distribution agencies of Canada and the United States; markets and public carriers; growth of the factory system and its relation to agriculture and the development of transportation facilities; relation of waterways to railways and the distribution of the waterways of the country and their effect on domestic commerce. (One paper).

Note.—The examinations for commercial specialists will be held in July at the same centres as the other departmental examinations.

Books of Reference Recommended.

Canadian Accountant. J. W. Johnston, Belleville.
Canadian Standard Bookkeeping. J. W. Westervelt, London.
Joint Stock Company Accounts. D. Hoskins, Toronto.
Accounting in Theory and Practice. Geo. Lisle. Wm. Green & Co., Edinburgh.
Penman's Art Journal, (commence with September No.) 203 Broadway, New York.
The Theory of Finance. Geo. D. King. C. & E. Layton, Farringdon St., London, E. C., Eng.
Digest of Canadian Mercantile Law. W. H. Anger, Toronto.
Shareholders' Manual. J. D. Warde, Toronto.
Assignments Act. Cassels. Hunter, Rose & Co., Toronto.
Auditing (chapters 1, 2, 3, 6, 7, 8). L. R. Dicksee. Gee & Co., London, E. C., Eng.
Elements of Political Economy. James Bonar. John Murray, Albermarle St., London, Eng.
Shorthand Instructor. Sir Isaac Pitman. The Copp Clark Co., Toronto.
The History of Commerce in Europe. H. de B. Gibbons. The MacMillan Co., London, Eng.
Note.—For The Winding-up Act, see R.S.O.

II. ART COURSE.

I. Freehand Drawing.

With pencil, pen and ink, charcoal, and black crayon.

Drawing of common objects from observation and from memory.
Imaginative Drawing. Illustration of stories.
Principles of Perspective.
Outdoor sketching. Sketching from school windows.

Drawing from the cast and the human figure.
Rapid memory sketches of figures in motion.
Composition.
Representation of flat and relief maps. (Two papers).

II. Clay Modelling.

Common objects. Relief maps. Modelling from the cast.

III. Color Drawing.

Suggestion of form with brush and ink; representation of common objects in monochrome tints; primary, secondary, and tertiary colors; proper combination of colors; watercolor and colored crayon drawings of common objects; outdoor sketching; sketching from the school windows. (One paper).

IV. Industrial Design.

In outline and color.

Practical geometry as far as necessary for construction of designs; principles of design and anatomy of patterns; units of design adapted from practical and geometrical forms; designs for floorcloths, wall paper, bookcovers, advertisements, etc. (One paper).

V. Geometrical and Mechanical Drawing.

Problems in practical geometry and perspective; orthographic and isometric projection; drawing from specifications; simple machine drawing; simple architectural drawing. (One paper).

VI. Drawing on the Blackboard.

With white chalk and colored crayons.

Common objects; illustration of nature study, geography, etc.

VII. History of Art.

An outline of the origin and development of Architecture, Sculpture and Painting, with some knowledge of the life and works of the great artists of each of the leading periods. (One paper).

Note.—(1) All the examinations for art specialists will be held in July at the Toronto Normal School.

(2) The examinations in clay modelling, in sketching and in drawing on the blackboard will be practical.

Books of Reference Recommended.

Light and Shade. Cross. Ginn & Co., Boston.
New Drawing Course. Vaughan. Nelson & Son, London, Eng.
Clay Modelling. Holland. Ginn & Co., Boston.
Clay Modelling, Elementary and Advanced. Alex. Gordon, Charles & Dible, London, Eng.

Manual of Clay Modelling. Unwin. Longmans, Green & Co., London and New York.

Elementary Brushwork Studies. Yeats. Philip & Son, London, Eng.

Brushwork Studies. Yeats. Philip & Son, London, Eng.

Color Study. Cross. Ginn & Co., Boston.

Design and the Making of Patterns. Hatton. Chapman & Hall, London, Eng.

Science and Art of Drawing. Spanton. The Macmillan Co.

Geometrical and Perspective Drawing. Spanton. The Macmillan Co.

Blackboard Drawing. Seaby. Nelson & Son, London, Eng.

Blackboard Drawing. Whitney. Davis Press, North Scituate, Mass.

Architectural Drawing. Edminster. The Pratt Institute, Brooklyn, N.Y.

Ancient Sculpture. Redford (George). Sampson, Low & Co., London.

How to Judge Architecture. Russell Sturgis. Baker & Taylor Co., New York City.

How to Study Pictures. Caffin. Century Co., New York City.

Masters in Art. Bates & Guild Co., Boston. The following numbers. Vol. I. Parts 2, 4, 6, 12; Vol. II. Parts 13,,14, 16, 17, 18, 21, 24; Vol. III. Parts 32, 35; Vol. IV. Part 41; Vol. V. Part 58; Vol. VI. Part 69.

Where possible students should also refer to the following:—

Plaster Casts and How they are Made. Frank Forrest Frederick. Comstock, New York.

Modelling in Clay. A. L. Vago. Comstock, New York.

Modelling. A Guide to Teachers and Students. E. Lanteri. Chapman & Hall, London.

History of Architecture. Banister Fletcher. Batsford, London.

September, 1906.

DEPARTMENTAL INSTRUCTIONS.

High School Entrance Examination, 1907

1. The High School Entrance examinations for 1907 will begin on Wednesday, the 26th of June, at 8.45 a.m., and will be conducted under the provisions of section 41 of the High Schools Act and sections 23-28 of the Regulations, subject to the instructions herein contained.

2. Candidates who purpose writing at the examination must notify the Public School Inspector before the 1st day of May.

3. A teacher who has pupils writing at the High School Entrance examination shall not be eligible to act as an Examiner or Presiding Officer where such pupils are writing.

4. When the County Council recommends the holding of an examination at any place other than the High School, the Presiding Officer shall be paid the sum of $3 per diem, and travelling expenses for conducting such examination, and the Examiners shall be allowed the sum of $1 per candidate for reading the answer papers. It shall be lawful for the County Treasurer to pay all the expenses of such examination on the certificate of the County Inspector.

Selections for Memorization.

Lead, Kindly Light; A Psalm of Life; Flow Gently Sweet Afton; The Heritage; Elegy Written in a Country Churchyard; The Barefoot Boy; Ye Mariners of England.

The selections for memorization are common to both the Ontario and Catholic Readers.

Duties of Inspector.

5. The Inspector shall notify the Education Department not later than the 3rd day of May in each year of the number of persons desiring to be examined at any High School or other authorized place within his jurisdiction.

6. In any city or town forming a separate inspectoral division, the Inspector or Inspectors of such city or town shall preside at the examinations, and in conjunction with the Board of Examiners for such city or town shall read the papers and report to the Education Department.

7. In counties in which more High Schools than one are situated the Inspector for the county shall elect at which High School he will preside, and shall notify the Education Department of the choice he makes, and in each of the other High Schools the Principal of the High School shall preside.

8. In the case of examinations affiliated with a High School, the Inspector, within whose district such affiliated examinations are held, shall appoint Presiding Officers, who shall be teachers in actual service, notice of which shall be sent to the Education Department; and such Inspector, together with the Examiners of the High School with which the examination is affiliated, shall be the Board of Examiners in all such cases.

9. Where from the number of candidates, or any other cause, additional Presiding Officers are required, the Inspector shall make such appointments as are necessary, preference being given to the other members of the Board of Examiners.

10. Where more examinations than one are held in an inspectoral division, the papers will be sent by the Education Department to the Inspector or the Presiding Officer, as the case may be.

11. The parcel containing the examination papers shall not be opened till the morning of the examination day, nor shall any envelope containing the papers in any subject be opened until the time prescribed in the time-table for the examination in such subject.

Duties of Presiding Officers.

12. To be in attendance at the place appointed for the examination at least fifteen minutes before the time fixed for the first subject, and to see that the candidates are supplied with the necessary stationery and seated so far apart as to afford reasonable security against copying.

13. To open the envelope containing the papers in each subject in full view of the candidates, at the time prescribed, and to place one paper on each candidate's desk.

14. To exercise proper vigilance over the candidates to prevent copying, and to allow no candidate to communicate with another, nor permit any person except another Presiding Officer to enter the room during the examination.

15. To see that the candidates promptly cease writing at the proper time, fold and endorse their papers properly, and in every respect comply with the instructions herein contained.

16. To submit the answers of the candidates to the Examiners, according to the instructions from the Board.

Duties of Candidates.

17. Every candidate should be in attendance at least fifteen minutes before the time at which the examination is to begin, and shall occupy the seat allotted by the Presiding Officer. Any candidate desiring to move from his allotted place or to leave the room shall first obtain permission from the Presiding Officer to do so. Any candidate leaving shall not return during the examination in the subject then in hand.

18. Every candidate shall write his answers on one side only of the paper, and number each answer. He shall arrange the sheets numerically, according to the questions, and fold them once crosswise, endorsing them with his name, the name of the subject, and the name of the place at which he is examined. A paper shall not be returned to a candidate after being placed in the hands of the Presiding Officer.

19. Any candidate who is found copying from another or allowing another to copy from him, or who brings into the examination room any book, note or paper having any reference to the subject on which he is writing, shall be required by the Presiding Officer to leave the room, and his paper and the papers of all the guilty parties shall be cancelled.

Duties of Examiners.

20. The papers of the different candidates shall be so distributed that the same examiner shall read and value the answers in the same subject throughout.

21. Marks are to be deducted for mis-spelt words and for want of neatness as indicated in Regulation 27.

22. —(*a*) The reports of the Examiners are to be sent (by mail) to the Education Department on or before the 25th day of July by the Public School Inspector.

(*b*) The bag which contains the question papers is to be returned to the Department (charges prepaid) at the same time as the reports are sent.

(*c*) The answer papers of candidates, unless when specially requested, are not to be forwarded to the Department, but are to be retained by the Inspector until the 1st day of October, after which no case is to be reconsidered.

(*d*) The Inspector shall issue a certificate to each candidate who passes the High School Entrance examination.

Time Table.

High School Entrance.

Wednesday, June 26th.

A.M.	8.45— 9.00	Reading Instructions (Circular 57).
	9.00—11.00	Composition.
	11.10—11.55	Spelling.
P.M.	1.30— 3.30	Geography.

Thursday, June 27th.

A.M.	9.00—11.30	Arithmetic.
P.M.	1.30— 4.00	Written Reading.

Friday, June 28th.

A.M. 9.00—11.00.....English Grammar.
11.10—12.00.....Writing.
P.M.—Oral Reading may be taken either Friday afternoon or at such other hours as are convenient.
September, 1906.

EXAMINATIONS, 1907. PRESCRIBED TEXTS.

District Certificate.

English: Tennyson, Ode to Memory, The Dying Swan, The Lotus Eaters, Ulysses, "You ask me, why," "Of old sat Freedom," "Love Thou Thy Land," "Tears, idle Tears," and the six interlude songs from the Princess, The Brook, Ode on the Duke of Wellington, Charge of the Light Brigade, Enoch Arden.

Junior Teachers.

English: Tennyson, Ode to Memory, The Dying Swan, The Lotus Eaters, Ulysses, "You ask me, why," "Of old sat Freedom," "Love Thou Thy Land," "Tears, idle Tears," and the six interlude songs from the Princess, The Brook, Ode on the Duke of Wellington, Charge of the Light Brigade, Enoch Arden; Shakespeare, Julius Cæsar.

Latin: Translation at sight of passages of average difficulty from Cæsar, upon which special stress will be laid.

Translation from a prescribed portion of Virgil's Æneid, with questions thereon.

Questions on Latin accidence.

Translation into Latin of English sentences to illustrate the common rules of Latin syntax, upon which special stress will be laid. The vocabulary will be taken from the prescribed portion of Cæsar.

Examination upon a short prescribed portion of Cæsar, to test the candidate's knowledge of Latin syntax and his power of idiomatic translation, etc.

The following are the texts prescribed:—

Cæsar, Bellum Gallicum, Book IV., chaps. 20-38, and Book V., chaps. 1-23; Virgil, Æneid, Book II., vv. 1-505.

Two papers will be set: (1) Translation at sight, Virgil, and accidence. (2) Translation into Latin, syntax, and idiomatic translation from prescribed Cæsar, etc.

Senior Teachers.

Latin: Cæsar, Bellum Gallicum, Book IV., chaps. 20-38, and Book V., chaps. 1-23; Virgil, Æneid, Book II.; Horace, Odes, Books III. and IV.; Cicero, Pro Lege Manilio, Pro Marcello.

Greek: Xenophon, Selections in White's First Greek Book; Herodotus, Tales, ed. Farnell I.-XI. incl.; Homer, Odyssey XXI.; Lucian, Timon; Lysias, Pro Mantitheo and de Invalido.

English: Tennyson, Ode to Memory, The Dying Swan, The Lotus Eaters, Ulysses, "You ask me, why," "Of old sat Freedom," "Love Thou Thy Land," "Tears, idle Tears," and the six interlude songs from the Princess,

The Brook, Ode on the Duke of Wellington, Charge of the Light Brigade, Enoch Arden: Shakespeare, Julius Cæsar, Midsummer Night's Dream.

German: Grimm Rotkäppchen; Anderson, Wie's der Alte macht, Das neue Klied, Venedig, Rothschild, Der Bär; Ertl, Himmelsschlüssel; Frommel, Das eiserne Kreuz; Baumbach Nicotiana, Der Goldbaum; Heine, Lorelei, Du bist wie eine Blume; Unland, Schäfer's Sonntagslied, Das Schloss am Meer; Chamisso, Das Schloss Boncourt; Claudius, Die Sterne, Der Riese Goliath; Goethe, Mignon, Erlkönig, Der Sänger; Schiller, Der Jüngling am Bache.

1907: Hauff, Das kalte Herz.

Baumbach, Der Schwiegersohn; Elz, Er ist nicht eifersüchtig; Wichert, Post Festum.

French: Lamennais, Paroles d'un croyant, chaps. VII. and XVII.; Perrault, le Maitre Chat ou le Chat botté; Dumas, Us nez gelé, and la Pipe de Jean Bart; Alphonse Daudet, la Dernière Classe, and la Chèvre de M. Seguin; Legouvé, la Patte de dindon; Pouvillon, Hortibus; Loti, Chagrin d'un vieux forçat; Molière, l'Avare, Acte III., sc. 5 (Est-ce à votre cocher . . . sous la mienne); Victor Hugo, Waterloo, chap. IX.; Rouget de d'Isle, la Marsellaise; Arnault, la Feuille; Chateaubriand, l'Exilé; Théophile Gautier, la Chimère; Victor Hugo, Extase; Lamartine, l'Automne; De Musset, Tristesse; Sully Prudhomme, le Vase brisé; La Fontaine, le Chêne et le Roseau.

1907: Labiche, la Grammaire; Sand, la Mare au Diable.

October, 1906.

COUNTY MODEL SCHOOL.

The attention of County Boards of Examiners is directed to the provisions of the Regulations (Sections 57-65), to the information in the Model School Calendar, and to the following:

I.

Admission Requirements.

(1) Candidates for admission to the County Model School must be 18 years of age on or before the close of the Model School term.

(2) The applicant must be the holder of one of the following certificates: —(*a*) A Part II. Junior Teachers' certificate, or a Part II. Junior Leaving certificate, each endorsed as provided in section 50 (3) of the Regulations; (*b*) A Senior Teachers' certificate, Parts I. and II., or Senior Leaving certificates, Parts I. and II.; (*c*) A District certificate endorsed as provided by section 50 (5) of the Regulations, or its equivalent as provided by section 43 (5) of the Regulations. (Note: Part I. Junior Leaving certificates or Public School Leaving certificates, issued under previous Regulations, entitle the holders to non-professional District certificate standing.)

County Boards of Examiners are required to insist on the necessary endorsation of the non-professional certificates before admitting candidates to a Model School.

II.

Professional District certificates shall be granted only with the permission of the Minister of Education. Only holders of full Junior Teachers' or Junior Leaving standing, or higher standing are eligible to receive Third Class certificates from County Boards of Examiners.

III.

Renewals may be made for the reasons given in section 87 of the Regulations for not more than three years in all, except when a teacher's certificate expires in December in any year such teacher may be granted a further extension of six months to enable him to enter the Normal School the following September. The reasons for each renewal must be stated in the proper column of the report of the County Board of Examiners (Form No. 71).

IV.

As the Principal of the Model School is required to report upon the standing of each teacher-in-training in the subject of Nature Study, provision should be made for adequate instruction in this subject. Oral Reading will be reported on by the Board of Examiners, and Methods in Reading by the Model School Principal as in the case of the other subjects mentioned in section 61 of the Regulations.

V.

Answer papers, with the Model School Principal's report, are to be retained by the Board. The former may be destroyed after the 1st of March following. The decision of the Board with respect to the examination shall be final.

VI.

The Board is requested to fill out the final report (Form 71) with all details asked for and to forward it to the Education Department not later than the 31st of December.

TIME TABLE.

Third Class Professional Examinations.

December, 1906.

The closing examinations of the County Model Schools will begin on Tuesday, December 11th. The examination in Practical Teaching and in Reading will be held after the close of the written examination, at such time as the Board of Examiners deems most convenient.

Tuesday, 11th December.

A.M.	8.45— 9.00	Reading Regulations.
	9.00—11.30	Methods—Arithmetic and Penmanship.
P.M.	1.00— 3.30	Methods—Literature and Spelling.
	3.40— 4.40	School Law and Regulations.

Wednesday, 12th December.

A.M.	9.00—11.30	Science of Education.
P.M.	1.00— 3.30	Methods—History and Geography.

Thursday, 13th December.

A.M. 9.00—11.30.....Methods—Grammar and Composition.
P.M. 1.00—2.30.....School Management.
October, 1906.

TEACHING DAYS FOR 1906.

High School and Collegiate Institutes and Public and Separate Schools in cities, towns and incorporated villages have the following number of teaching days in 1906:

Dates of Opening and Closing.

Open	3rd January.	Close	12th April.
Reopen	23rd April.	Close	29th June.
Reopen	4th September.	Close	21st December.

January	21	
February	20	
March	22	
April	15	
May	22	
June	21	
		—121
July	...	
August	...	
September	19	
October	23	
November	22	
December	15	
		79
Total		200

Rural Public and Separate Schools have the following number of teaching days in 1906:

Dates of Opening and Closing.

Open	3rd January.	Close	12th April.
Reopen	23rd April.	Close	29th June.
Reopen	20th August.	Close	21st December.

January	21	
February	20	
March	22	
April	15	
May	22	
June	21	
		—121
July	...	
August	10	
September	19	

DATES OF OPENING AND CLOSING.—*Continued.*

October	23	
November	22	
December	15	
		89
Total		210

TEACHING DAYS FOR 1907.

High School and Collegiate Institutes and Public and Separate Schools in cities, towns and incorporated villages have the following number of teaching days in 1907:

DATES OF OPENING AND CLOSING.

Open	3rd January.	Close	28th March.
Reopen	8th April.	Close	28th June.
Reopen	3rd September.	Close	20th December.

January	21	
February	20	
March	20	
April	17	
May	22	
June	20	
		120
July	...	
August	...	
September	20	
October	23	
November	21	
December	15	
		79
Total		199

Rural Public and Separate Schools have the following number of teaching days in 1907:

DATES OF OPENING AND CLOSING.

Open	3rd January.	Close	28th March.
Reopen	8th April.	Close	28th June.
Reopen	19th August.	Close	20th December.

NOTE.—Christmas and New Year's holidays (22nd December, 1906, to 2nd January, 1907, inclusive), Easter holidays (13th to 22nd April, inclusive), Midsummer holidays (for High Schools and Collegiate Institutes, and in cities, towns, and incorporated villages, 30th June to 3rd September, inclusive; rural schools, 30th June to 19th August, inclusive), all Saturdays and Local Municipal holidays, Dominion or Provincial, and Public Fast, or Thanksgiving Days, Labor Day [1st Monday (3rd) of Sept.] and the anniversary of Queen Victoria's Birthday (Thursday, 24th May), are holidays in the High, Public and Separate Schools, and no other days can be deducted from the proper divisor. The above named holidays are taken into account in this statement, so far as they apply to 1906, except any Public Fast or Thanksgiving Day, or Local Municipal holiday. Neither Arbor Day nor Empire Day is a holiday.

DATES OF OPENING AND CLOSING.—*Continued.*

January	21	
February	20	
March	20	
April	17	
May	22	
June	20	
		120
July	...	
August	10	
September	20	
October	23	
November	21	
December	15	
		89
Total		209

NOTE.—Christmas and New Year's holidays (21st December, 1907, to 2nd January, 1908, inclusive), Easter holidays (29th March to 7th April, inclusive), Midsummer holidays (for High Schools and Collegiate Institutes, and in cities, towns and incorporated villages, from 29th June to 2nd September, inclusive; rural schools, 29th June to 18th August, inclusive), all Saturdays and Local Municipal holidays, Dominion or Provincial, Public Fast, or Thanksgiving Days, Labor Day [1st Monday (2nd) of Sept.], and the anniversary of Queen Victoria's Birthday (Friday, 24th May), are holidays in the High, Public and Separate Schools, and no other days can be deducted from the proper divisor. The above named holidays are taken into account in this statement, so far as they apply to 1907, except any Public Fast or Thanksgiving Day, or Local Municipal holiday. Neither Arbor Day nor Empire Day is a holiday.

THE ADVISORY COUNCIL OF EDUCATION.

POWERS AND DUTIES IN RESPECT TO EXAMINATIONS.

I. *(a)* The Advisory Council shall appoint examiners of well known ability as teachers in either a University or a High School to set examination papers for the Junior or Senior Teachers' and the University midsummer Junior Matriculation examinations.

(b) The Council shall also appoint examiners of well known ability as inspectors or teachers to set examination papers at such other Departmental examinations as may be entrusted to it by the Education Department.

(c) The persons appointed examiners under *(a)* and *(b)* above shall not be engaged in the preparation of candidates for the examinations concerned.

(d) For the purpose of reading the answer papers of candidates at the examinations in *(a)* above, the Council shall appoint as associate examiners persons holding specialists' certificates according to the regulations of the Education Department, or graduates of any British University. Such persons shall be actually engaged in teaching, and shall have at least two years' successful experience in this Province.

(e) For the purpose of reading the answer papers of candidates at the other Departmental examinations, the Council shall appoint as associate examiners persons holding at least First Class certificates, who have been successful teachers and who are actually engaged in teaching.

(*f*) For the purpose of reading the answer papers at special non-professional examinations or at such professional examinations as may be entrusted to it by the Education Department, the Council shall appoint as associate examiners persons specially qualified.

(*g*) The lists from which the selections are made shall be prepared, in the case of the examiners in (*a*) above and of the associate examiners in (*d*) above, by the President of the University of Toronto and the Superintendent of Education; and shall be furnished in the case of the examiners in (*b*) above and of all the other associate examiners, by the Minister of Education. All the lists shall contain the names of more than the number of persons required for the examinations.

(*h*) Except in the case of an emergency, no examiner or associate examiner shall be appointed for more than three consecutive years.

(*i*) Any candidate except a candidate at the University Scholarship examinations may have his papers re-examined on appeal made to the Minister of Education not later than September 15th.

(*j*) The Council shall also have power to appoint from the lists of examiners supplied to it, such persons as may be required for reading the answer papers of candidates who have appealed to the Minister of Education for a re-examination of their answer papers.

(*k*) The number of examiners and associate examiners from year to year for each examination shall be settled by the Minister of Education on the report of the Chairman of the Board of Examiners.

II. The standard and character of the examination papers shall be determined by the regulations and instructions of the Education Department and the University of Toronto respectively.

III. Subject to the regulations and instructions of the Education Department and the University of Toronto respectively, the Council shall have power to settle the results of all the examinations entrusted to it by the Education Department and to report thereon to the Minister of Education. The settlement in the case of the Departmental examinations shall not be valid until approved of by the Superintendent of Education.

IV. (*a*) All communications or references requiring the attention of the Advisory Council shall be addressed to the Deputy Minister of Education.

(*b*) The Advisory Council shall appoint an executive committee of not more than three members.

(*c*) The Superintendent of Education shall submit to the Advisory Council for consideration all matters referred to it by the Minister of Education.

(*d*) The Registrar of the Advisory Council shall be Chairman of the Board of Examiners and of any committee thereof, and shall perform the duties set forth in Circular, "Instructions," No. 7.

November, 1906.

THE COURSE AND THE EXAMINATION IN UPPER SCHOOL GEOMETRY FOR 1907.

At the examination for the Senior Teachers' non-professional certificate next July (1907) no questions will be set on Section B.—Synthetic Geometry—of the Upper School course. After 1907, the examination will be on the whole course as set forth on pp. 85-91 of the Regulations.

The following corrections have also been made in the course as given on p. 90:

For

$$\cos\theta = \frac{A\,A' + B\,B'}{\sqrt{A^2+B^2}\ \sqrt{A'^2+B'^2}}$$

read

$$\tan\theta = \frac{A'\,B - A\,B'}{A\,A' + B\,B'}$$

Prefix signs as below:

$$-\frac{A\,a+B\,b+C}{A\,l+B\,m}$$

$$-\frac{A\,a+B\,b+C}{\sqrt{A^2+B^2}}$$

On p. 91, for "Length of tangent" read "Square of tangent."
November, 1906.

THE RECENT AMENDMENTS TO THE PUBLIC SCHOOLS ACT.

(Memorandum from the Minister of Education.)

I. The Duty of the State

The first duty of the State is to provide conditions conducive to good citizenship. Foremost among these conditions is an efficient system of public instruction, especially in a democratic community, for there especially the voter must be educated. Each Provincial Government, accordingly, accepts full responsibility by enacting compulsory educational laws and regulations and enforcing their observance by a comprehensive system of inspection. Moreover, each Government contributes largely of the public funds for the support of education; it requires the municipalities to provide their share for the same purpose; and our Public Schools are free.

II. Conditions of Efficiency in Schools.

Efficiency in a school system cannot be secured without competent teachers and suitable accommodations and equipment; and competent teachers cannot be secured unless the salaries paid them are such as to induce men and women of maturity, scholarship and ability to become and to remain teachers.

III. The Seriousness of the Present Public School Situation.

For some years the Public School system of Ontario, as a whole, has been in an unsatisfactory condition. The following are evidences of the seriousness of the present situation:

(1) The general discontent with the condition of the Public Schools (the rural schools in particular), as shown for years by adverse and widespread newspaper criticisms, by the complaints of public men, and by the representations of Public School inspectors and other educationists who know the situation at first hand.

(2) The scarcity of teachers and the resultant lowering of the standard of their qualifications.

As the schools must be kept open, an insufficient supply of teachers necessarily lowers the standard. The statistics demonstrate this; for the number of temporary certificates and certificates lower than third class rose in rural schools from 463 in 1903 to 954 in 1905, and the number for the present year will show a still greater increase, notwithstanding the efforts the Department has made to prevent it. The seriousness of the situation is emphasized by the following additional statistics: In 1905, of 5,694 teachers in the rural schools, 2,904 held third class certificates; 1,693, second class; and, in all the rural schools of this rich and prosperous Province of Ontario, there were only 143 teachers with first class certificates. The statistics of the urban schools make a better showing; for, in the same year, of 2,985 in these schools, 88 held temporary, or lower than third class; 232 third class; 2,159 second class, and 506 first class.

(3) The large number of female teachers and the decrease in the number of male teachers.

The following table shows the general tendency in the Public Schools since 1877:

Year.	Total.	Male.	Female.	Year.	Total.	Male.	Female.
1877.....	6,134	2,915	3,219	1897.....	8,376	2,690	5,686
1882.....	6,467	2,964	3,503	1902.....	8,497	2,200	6,297
1887.....	7,103	2,627	4,476	1903.....	8,560	2,062	6,498
1892.....	7,818	2,635	5,183	1904.....	8,610	1,957	6,653
				1905.....	8,679	1,839	6,840

In the rural schools, in 1903, 1,542 were males and 4,115 females; and, in 1905, 1,320 were males and 4,374 females. Here also the urban municipalities make a better showing; for, in 1903, 520 were males and 2,383 females; and, in 1905, 519 were males and 2,466 females. The seriousness of the situation is, however, shown more unmistakably by the statistics of the Normal School attendance. In 1901, 121 male teachers attended the Normal Schools; and in 1902, 123; while, on the lengthening of the term, the numbers each year from 1903 to 1906 were only 14, 22, 18, 20; that is, of a total attendance for these years of 1,162, only 74 were males.

The preponderance of females is due to the fact that the inducements for males to enter the teaching profession have year after year become less and less potent, owing largely to the greater remuneration offered elsewhere.

For junior forms, female teachers are more suitable than male teachers; but, for fourth and fifth forms, male teachers are generally necessary. This proposition needs no defence.

(4) The increase in the number of teachers who are young (in most cases from eighteen to twenty-one or twenty-two) and who remain teachers only a short time.

This condition is due partly, as above, to the inducements in other occupations and partly to the fact that the girls, who are by far the more numerous, become teachers with no intention of remaining longer than the three years for which their third class certificates are valid. The teachers in the rural schools are, accordingly, continually changing. The average term of service, indeed, is less than five years. It stands to reason that we cannot

have efficiency under such conditions. No business in which most of the experienced employees are replaced every five years by other and inexperienced ones, could possibly succeed.

(5) The general condition of the rural schools to-day is, in many sections, little, if at all, better than it was twenty or twenty-five years ago.

As a class, the rural schools have not benefited by the prosperity of the country, nor have they advanced as have the High Schools and the Universities. In the suitability of their accommodations and in their equipment, including libraries, etc., they are, generally speaking, relatively and absolutely defective. The best teachers, too, are leaving the rural schools and entering upon other occupations, or they are going west to the new Provinces, where, instead of the $250, $300, or $350 they get here, they can readily obtain from $600 to $800 a year. In fact, for years, our Normal Schools have been training teachers for Manitoba and the western Territories; and, to keep up our supply, we have had to resort to the products of the Model School, and insufficiently trained inexperienced teachers, and to holders of temporary certificates. The salaries, too, in some places in Ontario are now actually lower than they were ten or fifteen years ago, notwithstanding the increased cost of living. To-day we must pay the man who splits our wood at least $1.50 a day; we can get a teacher a poor one, indeed at less than a dollar a day. The cause is not far to seek: many sections market their schools and take the cheapest (and generally the poorest) applicant. Some years ago, when there were forty or fifty applicants for nearly every vacancy, the standard was not at once raised. Under-bidding lowered salaries, and this inevitable result has in turn become the cause of our present distress.

IV. How Improvement may be Effected.

While most of the poorer sections spend as much on their schools as can be expected from them and many are spending even more; while, also, many sections are spending a fair amount, a very large number are spnding far less than they are able. The Government is charged with the responsibility of maintaining an efficient system; and, owing to the default of the section boards, which are primarily responsible, the Government is bound to interfere. As has already been pointed out, the efficiency of the schools depends upon the suitability of the accommodations and the equipment, the qualifications of the teachers, and the salaries paid them. Improvment on these three lines is, accordingly, the present object of the Government's policy.

The Legislative and County grants will hereafter be distributed on a basis which will improve both the accommodations and the equipment, and to assist boards in providing proper equipment, the Legislature, at its last session, made a special grant of $10,000 to the Continuation classes, and of $10,000 to the District schools. For general purposes, it gave a special grant of $60,000 to the rural schools in old Ontario and required the counties to add the equivalent of this special grant and of the grant to Continuation classes. An extra township grant of $150 is also to be raised this year to give boards further assistance in preparing the accommodations and equipment for the new scheme of distributing the Legislative and County grants. Former Regulations have always provided for a minimum equipment for every Public School; but in many instances they have been insufficiently complied with, to the great disadvantage of education. The minimum prescribed in Circular 33, is necessary for a modern programme taught by modern methods, and for every school under the improved conditions of education to which we hopefully look forward. Moreover, in a few years, boards will be recouped for their present expenditure by the minimum grant to which each school

which provides the equipment will be entitled under the Public Schools Act. Circular 33 also gives the details of the different items of accommodations, and a large proportion of the Legislative and County grants will be distributed on this basis. Those boards, accordingly, that have followed the recommendations of the circular will next July meet with their reward. (Circular 33 and instructions, No. 12, may be obtained on application to the Public School Inspector).

To increase the efficiency of the teachers, the Government is also providing an improved system of professional training in the form of three additional Normal Schools for old Ontario and one for new Ontario, at a capital cost of more than $250,000, and an increase of the yearly expenditure for maintenance of more than $60,000. With the addition of a Faculty of Education in the Provincial University, which has now been arranged for, we shall have, in a couple of years, a complete and modern system of training for all grades of teachers. The new scheme of professional training will provide for two main grades of Public School teacher certificates, first class and second class. The work for first class teachers and High School assistants will be taken up in the new Faculty of Education in Toronto University; that for second class in the reorganized Normal Schools. It is, however, intended to provide in addition for the less advanced counties in old Ontario and the poorer parts of the districts, teachers with qualifications corresponding to those of the old third class certificates (primary non-professional). The professional work for these certificates will be taken up in a few Model Schools which will be retained for the purpose and made thoroughly efficient. Such certificates will, of course, be confined to the counties and districts concerned, and it is hoped will gradually disappear.

But these improvements would be of little avail if we did not secure and retain competent men and women by providing adequate salaries. The experience of all other professions and of the trades has shown that the fixing of fees and wages cannot be left to the generosity of individual employers. Unlike the members of the other professions and the trades, our teachers are not permitted to manage their own affairs. Combinations and strikes among them would, therefore, be ineffectual. Moreover, as the Government is directly responsible for our educational system, combinations and strikes would be intolerated. In justice, therefore, to the Public School Teachers, whose salaries have long been inadequate, the Government has been compelled to interfere, and owing to the critical condition of affairs, to interfere without delay.

It is an acknowledged principle of taxation in a democratic community, that the rich should help the poor in any matter that concerns the interests of the whole community. On this sound principle have been based the county and township levies for school purposes. As a result of last session's legislation, the county now gives at least the equivalent of the special grant of $60,000, and the township grant has been increased, according to the assessment, from $150 to $300 when the average assessed value of the township is not less than $30,000 per section. And further, after 1906, the latter grant must be applied to the teacher's salary, with an addition from section funds of from $200 to $25, according to the ability of the school board as measured by the value of the assessment. This addition, it should, however, be noted, is not necessarily a tax on the section; for the Government grant, and, in many cases, other sources of revenue, are available.

As regards minimum salaries, the effect of last session's legislation is as follows: Where the average assessed value of a township is equal to at least $30,000 per school section and the assessed value of a section is at least $200,000, $150,000, $100,000, $50,000, $30,000 or below $30,000, the mini-

mum salary respectively payable to a principal teacher would be for the whole year $500, $450, $400, $350, $325, or $300, and, in any case, for each assistant, $300. If, however, the average assessed value of the township is less than $30,000 per section, the township grant is still $150, and the minimum salary payable a principal teacher would vary, as above, from $350, where the section assessment is $200,000 to $150, where it is less than $30,000; and for every assistant teacher employed the whole year the minimum would be $200. From this it is clear that the poorer sections in townships where the average section assessment is less than $30,000, are not yet so well situated financially as are the poorer sections in other townships; and it is equally clear that they and other needy sections must now be helped either by legislation or by special legislative grants, or by both.

An important effect of the recent legislation is, what has long been urged, a fair approximation to an equalization of school taxation. It is manifestly unfair that Jones who lives on one side of the road should pay two or three times as high a rate on the dollar to maintain his school, as does Smith who lives on the other side, simply because Smith lives in the wealthier section. And further, had the Government simply provided the $300 township grant without attaching the condition of a minimum local addition, many sections, well able to pay more, would, undoubtedly, make $300 the maximum of the teacher's salary.

Having regard, therefore, to the requirements of the public service, the plan adopted is as fair a one as could be devised. Moreover, the principle of minimum salaries had the unanimous support of both sides of the Legislature at its recent session. True, the richer sections help the poorer ones; but there is nothing exceptional in this. A man's ability to pay is the basis of our system of taxation, and the claims of the commonwealth are superior to those of the individual.

V. Objections Considered.

Naturally enough, these changes have in some quarters provoked opposition. The following are the chief objections:

(1) "Well qualified teachers should have been provided before boards were called upon to increase salaries."

Even for the teachers we now have, the salaries are often absolutely and relatively too low, and, what is more directly to the point, teachers could not be induced to double the cost of their professional training, as will be required by the new Normal School system, if they had not the assurance of fair salaries after completing their course. The improvement—the immediate improvement—of the teachers' salaries is the key to the situation.

(2) "Instead of coercing boards to give higher salaries, moral suasion should have been applied in the form of a campaign of education."

The condition of affairs has been shown to be critical; and, while a campaign of education is desirable under any circumstances and is now being conducted under instructions from the Government by Public School Inspectors and others, such a campaign would take too long to remedy the present serious evils, even if—which is most unlikely—it succeeded in the end in doing so generally.

(3) "The qualifications of the teacher should have been taken into account in fixing the minimum salary."

Experience has shown that if the salary offered is adequate, applicants with the required qualifications will present themselves. Besides, it is the intention of the Education Department to prescribe the qualifications for different grades of school. Before long it will be impossible for a teacher

with a low grade certificate to hold, as he now may, the principalship of the most important Public School in the Province.

(4) "Some sections with a small school attendance and a high assessment must pay a high salary."

A small attendance is just as much entitled to a good teacher as a large attendance, more especially as the school tax is on property which is well able to pay it without an exceptional increase of the rate. Besides, under the Public Schools Act, one section may unite with an adjoining one, or a section may close its school and pay fees for the admission of its children to the school of an adjoining section. If, indeed, the recent amendments to the Act lead to the establishment of consolidated schools, their existence will have been amply justified even on this ground alone.

(5) "Urban municipalities have not been included in the scheme for increasing the salaries of Public School teachers. The farmers have been singled out by this special legislation."

The statistics showing the grades of teachers employed and the salaries paid in the urban and rural municipalities demonstrate the fact that it is rural municipalities that need special and prompt legislation. Nor should the fact be overlooked that, while the Legislature has singled out the farmers for this special taxation, it has also singled them out already for a special legislative school grant of over $70,000 and has given all the sections a county grant and most of them a doubled township grant. Moreover, the Government does not take the ground that last session it did all it intends to do in carrying out its pledge to make the Public Schools its first and chiefest care. It is true, however, that some urban boards pay too small salaries, and that many are poorly equipped. It will, accordingly, be necessary to propose legislation on this subject when the Public Schools Act is consolidated.

(6) "The course taken of coercing school boards is exceptional and offensive."

As has already been made clear, even if the recent action of the Legislature in prescribing minimum salaries were a drastic one, the present condition of affairs would justify it. Moreover, all laws are based on coercion and are made for the good of the community. It may here be pointed out that the only other effective course open to the Education Department would have been to raise the standard of the qualifications, and to restrict the supply of teachers. This course would have forced salaries up, but it would have been coercion indeed--coercion, moreover, applied without regard to the necessities of the schools, which necessities the Education Department is bound to consider. It may be pointed out also that except in the matter of fixing a minimum salary, the Education Department has interfered in no way with the responsibility of school trustees.

But the mandatory feature of the recent school legislation is not an exceptional one; it is simply an extension of what has been long applied in similar cases;

(*a*) The salaries of ordinary civil servants are fixed and paid by Government.

(*b*) Those of semi-civil servants are fixed where part is paid by the Government and part by the locality; *e.g.*, Public School Inspectors.

(*c*) Those of semi-civil servants are fixed where the whole salary is paid by the locality; *e.g.*, Police Magistrates.

(*d*) Those of semi-civil servants who are paid by fees are also prescribed by a scale of fees; *e.g.* Local Registrars.

The teacher is also a semi-civil servant; for the Government prescribes his qualifications, restricts his liberty of action, and even contributes towards

his salary. In view, accordingly, of the importance to the state of an efficient school system, the state is bound to protect him when it is shown that he is suffering an injustice.

Moreover, the principle of minimum salary is applied in other cases. In the Church, where, unfortunately, the conditions resemble those of the teaching profession, three denominations have established minimum salaries—the Presbyterians, $800 and a manse for married men and those with relatives dependent on them; for others, $750; the Methodists, for married men, $750; for single men (ordained), $600; and for probationers, $400; and the Baptists, $750. And, as is well known throughout the Province, the various trades unions take forcible and effective means to secure proper wages.

Nor is a scheme of minimum salaries a novelty in education: In some of the States of the Union—in Mississippi, Indiana, Maryland, West Virginia, and even in the rich commonwealth of Pennsylvania—where conditions similar to ours have prevailed, the minimum salary plan has been established. In Indiana a penalty not exceeding $100 has been fixed for each violation of the minimum salary law. The State Superintendent of Pennsylvania writes that the plan has been successful, and that salaries have gone up, although fears were entertained at first to the contrary. The State Superintendent of Indiana also writes that the law is working satisfactorily to the people, and that it is hoped that, at its next session, the Indiana legislature will increase the salaries above those prescribed by the present law. In British Columbia, where the minimum salary is $600, and in Germany, where the teacher is an honored civil servant, the salaries are paid by the Government from the general rates. Twenty years ago, when the condition of our now prosperous High Schools resembled the present condition of our rural Public Schools, and when the legislative grant was a far more important element in the annual expenditure than it now is, the Boards were compelled to expend in teachers' salaries at least the legislative grant and the county equivalent. And further, it is well known that the remarkable growth and exceptionally efficient condition of the High Schools are largely due to a system of Departmental coercion which has for years been strenuously applied. The Province is proud of the prosperity and efficiency of its High Schools; no one now regrets the means taken to secure it.

Anything that savours of coercion is naturally offensive to a free people; but British subjects have always been law-abiding when their reason has been convinced. When Dr. Ryerson succeeded in making the Public Schools free, he encountered for a time, the bitterest opposition, and then also the opponents of the reform cried "Coercion." No one now doubts the wisdom of his course. There has, it is true, been some opposition to the minimum salary scheme of the present governmnet, but it is to the credit of the people that it has been comparatively slight, and chiefly where the scheme and its causes have not been understood. Reports from inspectors are, with few exceptions, decidedly favourable; and the following from an inspector who has experienced some opposition, may be taken as an evidence of the general situation:—

"The beneficial effects of the recent School amendments are felt even now:

(*a*) More Normal trained teachers have been engaged since midsummer in this inspectorate than ever before.

(*b*) For the first time in the history of the Townships none but Normal trained teachers have been employed.

(*c*) Many teachers, natives of the county, are coming home to teach from the west, owing to the prospect of fair salaries.

(*d*) Schools that have always engaged a cheap teacher, who was usually a poor teacher, are now engaging Normal trained teachers at a fair salary.

(*e*) There are about ninety students in training at the Model Schools in the county. About thirty or forty of them are young men.

The most pleasing feature to me is this:—I have some excellent teachers in poor school houses. Before this law was passed, had the Trustees offered to build a new school house, the people of the section would have brought such pressure to bear on them that they would have had to engage a cheap teacher until the school house was paid for. Now they can build and retain a good teacher. I am getting four new school houses already and expect three more."

I now commend to the earnest consideration of the Province the scheme above set forth for the improvement of our Public Schools, as being an equitable and workable solution of a difficult problem. Experience will, no doubt, show where amendments may be made, and I shall be glad to receive suggestions on the subject. It is, however, only reasonable that a fair trial should be given a solution which meets our most pressing difficulties and which has been well received by Educationalists and by the general public.

NOVEMBER, 1906.

TRAVELLING LIBRARIES.

REGULATIONS.

1. On satisfactory guarantee that all regulations will be complied with, Travelling Libraries may be lent to small Public Libraries.

2. The Library Board must be personally responsible for loss or injury beyond reasonable wear.

3. Books (only one case at a time) will be loaned without charge excepting the payment of damages for loss or injury to books beyond reasonable wear. The charges for transportation from the Education Department, or from the Public Library from which the Travelling Library may be shipped, are to be paid by the borrowing library, but charges for returning the books to Toronto are to be paid by the Department.

4. The Travelling Library shall not be kept longer than three months after its reception, except by special permission from the Minister of Education.

5. The Librarian shall care for the books while under his control, circulate them in accordance with the Regulations of the Department and the Rules of the Library, and make required reports respecting their use.

6. The books will be carefully selected for each Travelling Library, but the Department will not undertake to furnish other books than those forming each library collection.

7. So far as possible the works of standard authors will be selected, including books of natural and social science, biography, history and travel, in addition to a moderate proportion of fiction.

8. The Library shall be open for obtaining and returning books at such times as the Library Board shall direct.

9. The Library Board may require each borrower to pay promptly any fines due for overdetention of books, or for injuries of any kind beyond reasonable wear to any book charged to him.

10. All corrections of the text, or marks of any kind on books belonging to the Travelling Library are unconditionally forbidden, and all losses or

injuries beyond reasonable wear must be propmtly adjusted to the satisfaction of the Trustee by the person to whom the book is charged.

November, 1906.

Duties of the Registrar.

1. The Registrar of the Advisory Council shall preside, as Chairman, at all meetings of the Board of Examiners, or of any committee thereof, and shall furnish all necessary information. All cases of dispute at meetings of the Board or its committees shall be settled by a majority of the Examiners. In case of a tie the Chairman shall have the casting vote.

2. During the reading of the answer papers the Registrar shall see that the instructions to Associate Examiners hereinafter outlined are observed; and, except where it is in his judgment absolutely necessary to disclose the candidate's name or examination centre, he shall so deal with all correspondence that the identity of the candidates shall be disclosed to neither the Examiners nor the members of the Advisory Council. He shall assign a pseudonym to each Associate Examiner and shall have power, in case of necessity, to transfer Associate Examiners from one section to another.

3. He shall exercise a general supervision over the printing and distribution of the question papers, and over the sorting, numbering and otherwise preparing the envelopes containing the answers, so that the answers may be conveniently read by the Examiners and Associate Examiners; he shall have charge of the reading of the answer papers, and, after the reading, he shall superintend the entering of the marks in the books by the clerks of the Department and the preparation of the results so that they may clearly indicate the subjects in which the condidates have passed or failed.

4. He shall take the necessary steps in order that appeals may be read as speedily as possible.

Duties of Examiners.

5. Each Examiner shall be required to discharge all duties pertaining to his office, and no duty which an Examiner is appointed to perform shall be delegated to another Examiner without the approval of the Advisory Council. Each Examiner shall prepare the examination papers assigned to him within the limits of the courses of study for which they are prescribed, and of the authorized text-books.

6. The papers set for the Part II. Junior Teachers' and the Senior Teachers' examinations shall be prepared in accordance with the requirements of candidates desiring to become teachers.

7. In the prose composition papers in Classics and Modern Languages the vocabulary required shall be such as is found in the prescribed portion of text and text-book.

8. Each paper in a department shall be signed by each Examiner in the department, and shall be approved by all the Examiners in the department at a meeting held for the purpose before it is submitted to the Board of Examiners for consideration.

9. The Examiners, in the case of the Junior and Senior Teachers' and the Junior Matriculation Examinations, shall be present at the beginning of reading of the answer papers. Each Examiner shall discuss with the Associate Examiners in his section the character of the answers required by the question, and especially the value of incomplete or imperfect answers, so as

to insure, as far as possible, uniform marking. In cases of differences of opinion on any point the decision of the Examiners shall be final; and, without the consent of the Examiner concerned, no Associate Examiner shall set aside any part of the agreement made as the result of this discussion. Any additional necessary allowance shall be made by the Revising Board on the report of the chairman of the section through the Registrar.

10. Such of the Examiners as may be appointed a Revising Board by the Advisory Council shall, after due consideration of all doubtful and special cases, make such reports as will enable the advisory Council to settle the results of the examinations.

11. With such Associate Examiners as may be appointed by the Advisory Council, the Examiners shall also read the appeals and make, through the Revising Board, such reports as are provided for in 10 above.

12. The Examiners shall report to the Advisory Council the pseudonyms of all Associate Examiners whose work appears to have been performed with marked carelessness or incapacity, or who have shown any substantial disregard of the instructions of the Advisory Council.

Duties of Associate Examiners.

13. The Associate Examiners shall be classified into sections according to the subjects of examination, and a chairman shall be appointed in each section by the Registrar. The chairman of each section shall have a general oversight of the work done in his section, and shall see that the regulations are carried out *and that the marking is uniform*. He shall also report to the Revising Board, through the Registrar, any matters that require its attention. In the case of an emergency, as in the absence of a chairman of a section, the Registrar shall appoint a chairman *pro tempore*.

14. An Associate Examiner shall not have in hand more than ten papers at one time, nor shall he have more than one envelope open upon his table at one time, and he shall return each examination book to its proper envelope. As soon as an examination book is removed from its envelope the candidate's number shall be placed on the front page of the book. *The envelopes, with their enclosures, must be returned in numerical order in which they are received.* In cases of suspected copying the Associate Examiner shall note on the face of the envelope, "Copying, see No. ....., question.....," and through the chairman of the section report the case at once to the Registrar. In such cases the Associate Examiner and the chairman of the section shall make a detailed report of the grounds of suspicion.

15. In the case of the papers in *English Grammar, Literature*, and *Composition*, one mark shall be deducted for each mis-spelt word and one mark for each instance of incorrect English. At all examinations in Arithmetic, either arithmetical or algebraical solutions should be accepted.

16. In reading the answer papers each Associate Examiner shall mark distinctly in the left hand margin the value assigned by him to each answer or partial answer, shall place the total on each page at the foot of the margin and enter this total at the top of the next page; he shall place the result on the face of the envelope, indicating in the case of the papers in English Grammar, Literature and Composition, the deduction for mis-spelt words and incorrect English thereon, thus, *e.g.*, Grammar, 80 −2 sp. —4 f.s.—74. He shall also sign his pseudonym on the envelope of each examination book examined.

17. Associate Examiners shall be in their respective places so that the reading may commence promptly at the time specified, viz., 9 a.m. and 2

p.m., and no Associate Examiner shall stop work before the hours of closing, viz., 12 noon and 5 p.m., without reporting to the chairman of the section and obtaining his consent.

18. Associate Examiners shall refrain from all unnecessary conversation or other causes of disturbance and shall devote themselves strictly to the work of the examination; they shall keep a record of the papers read each day and shall report the results of their work to the chairman of their respective sections.

19. *They shall not at any time enter the rooms of other sections unless when it is necessary to do so in entering or leaving their own rooms, or when the sanction of the Registrar has been obtained.*

20. *The work is confidential throughout.* Should the identity of an examination centre or of any particular candidate be discovered by an Associate Examiner he shall report the fact without any delay to the Registrar, or, in his absence, to the clerk of committees, who shall change the Associate Examiner, or make such other arrangements as he may deem expedient.

21. The instructions herein contained so far as they relate to the examinations of the Education Department and matriculation into the University shall be subject to amendment from time to time with the approval of the Education Department and of the Senate of the University of Toronto.

NOVEMBER, 1906.

II.—ORDERS IN COUNCIL.

Professor Guy de 'Lestard appointed temporarily to the position of French Teacher at the Toronto Model School. Approved 5th January, 1906.

Mr. Arthur Hugh Urquhart Colquhoun, B.A., appointed Deputy Minister of Education, said appointment to take effect on and from the 6th day of February, 1906. Approved 7th February, 1906.

Subject to the requirements of the Regulations, High School established in the Town of Wingham. Approved 7th February, 1906.

Miss Priscella H. Bayfield granted a certificate as Director of Kindergarten Schools. Approved 21st February, 1906.

Mr. Patrick W. Bartley, B.A., of the Royal University of Dublin, Ireland, granted an Interim Second Class Certificate. Approved 20th April, 1906.

Following persons appointed to the regular staff of the Education Department:

Mr. Norman Brown, Junior Clerk.
Mr. George Lyons, Messenger.
Miss E. Dennis, Stenographer to the Minister of Education.
Miss Myrtle Gregg, Stenographer to the Deputy Minister.
Miss E. King, Stenographer, Departmental Library.
Mr. W. A. Poole, Guard in Museum.
Approved 18th May, 1906.

Mr. John Seath, M.A., LL.D., appointed Superintendent of Education, said appointment to take effect on and from 25th day of May, 1906. Approved 26th May, 1906.

Subject to the requirements of the Regulations, High School established in the Town of Penetanguishene. Approved 28th May, 1906.

Mr. James Elgin Wetherell, M.A., appointed Inspector of High Schools and Collegiate Institutes, said appointment to take effect on and from the 15th day of September, 1906. Approved 28th May, 1906.

Ten graduates of the Lillian Massey School of Household Science granted certificates of qualification as teachers of Household Science in the Public and High Schools. Approved 4th June, 1906.

Mr. Clarkson W. James, Clerk and Private Secretary to the Minister of Education, appointed Secretary to Department of Education. Approved 15th June, 1906.

Miss Luella E. J. Fear, a graduate in Domestic Science of the Ontario Ladies' College, Whitby, granted a certificate of qualification as a teacher of Household Science in the Public and High Schools. Approved 15th June, 1906.

Mr. Thos. David Allingham granted a temporary certificate as Principal valid for two years in the Penetanguishene High School. Approved 20th June, 1906.

Mr. Henry Byron Spotton, M.A., appointed Inspector of High Schools and Collegiate Institutes, said appointment to take effect from the 15h day of September, 1906. Approved 20th June, 1906.

Mr. T. W. Crothers, Barrister-at-Law, St. Thomas, and Mr. John A. Cooper, Journalist, Toronto, appointed Commissioners to enquire into and report upon the reasonableness of the present prices of the School Text Books now on the authorized list and to enquire also into the prices of such publications elsewhere. Approved 30th June, 1906.

Mr. Robert H. Cowley, B.A., appointed Inspector of Continuation Classes. Approved 30th June, 1906.

Regulations for the accommodation and equipment of Rural Public and Separate Schools. Approved 13th July, 1906.

Miss Mary Adele Ashall, appointed to the staff of Education Department. Approved 13th July, 1906.

Following appointments made to the Ontario Normal College for the session 1906-1907:

Mr. R. A. Thompson, B.A., Acting Principal.

Professor Albert H. Abbott, B.A., Ph.D., Lecturer in Psychology.

Professor F. Tracy, B.A., Ph.D., Lecturer in Science and History of Education.

Approved 13th July, 1906.

A Normal School was established in each of the cities of Hamilton, Stratford, and Peterborough, and in the Town of North Bay, conditionally in each case that a proper site for the same be furnished by the municipality. Approved 16th July, 1906.

Mr. George Lynch Staunton, K.C., Hamilton, appointed Legal Counsel to the Commission lately appointed to inquire into and report regarding the prices of Text Books. Approved 16th July, 1906.

Mr. Alexander Clark Casselman, appointed Secretary to the Text Book Commission. Approved 16th July, 1906.

Mr. John Baxter Johnston, M.A., Glasgow University, Scotland, granted Interim Second Class Certificate. Approved 7th September, 1906.

Mr. Alexander John Russell Snow, Barrister-at-Law, appointed a Commissioner to investigate the workings of the Institution for the Blind, at Brantford, and the Institution for the Deaf and Dumb, at Belleville. Approved 5th October, 1906.

Mr. Charles Bernard Coughlin, M.D., appointed Superintendent and Principal of the Institution for the Deaf and Dumb at Belleville, said appointment to take effect on and from 15th November, 1906. Approved 20th October, 1906.

Regulations regarding the Senior Teachers' Examination approved 24th October, 1906.

Miss Susie Bawden, granted a certificate as a teacher of Household Science. Approved 24th October, 1906.

Regulations regarding County Model Schools approved 24th October, 1906.

Mr. John Eastwood Hodgson, M.A., of the University of Toronto, granted a High School Principal's certificate with Specialist standing in Classics and English. Approved 5th November, 1906.

Miss Marguerite Eliot, appointed Assistant in the Boys' Model School at Ottawa, said appointment to take effect from 1st November, 1906. Approved 9th November, 1906.

Mr. J. Ball Dow, School Trustee, Whitby, and Mr. John H. Langton, School Trustee, Parkhill, appointed members of the Advisory Council of Education, as representing the School Trustees of the Province. Approved 7th December, 1906.

Rev. W. J. Murphy, Rector of the Ottawa University, appointed as that body's representtative on the Advisory Council of Education. Approved 7th December, 1906.

Regulations respecting Public Libraries, Reading Rooms, and Travelling Libraries approved 14th December, 1906.

Miss Esther L. Ryan, B.A., McGill University, granted an Interim Second Class certificate. Approved 14th December, 1906.

Miss Alice Gertrude Steen, B.A., McGill University, granted an Interim Second Class certificate. Approved 14th December, 1906.

APPENDIX H.—PUBLIC LIBRARIES, LITERARY AND SCIENTIFIC INSTITUTIONS, ETC.

REPORT OF T. W. H. LEAVITT, INSPECTOR OF PUBLIC LIBRARIES, SCIENTIFIC INSTITUTIONS AND LITERARY AND SCIENTIFIC SOCIETIES RECEIVING A SHARE OF THE LEGISLATIVE GRANT, IN THE PROVINCE OF ONTARIO, FOR THE YEAR ENDING 31ST DECEMBER, 1905.

To the Hon. R. A. Pyne, M.D., LL.D., Minister of Education for the Province of Ontario.

I have the honour to submit herewith the report on the Public Libraries, Scientific Institutions and Literary and Scientific Societies receiving a share of the Legislative Grant for the year ending 31st December, 1905.

The following Libraries were incorporated during the year:—

Bath, Corkery, Fort William, Grafton, *Tweed.

The following Libraries were closed:—

Aberarder (books transferred to S. S. No. 15, Plympton), Hillsburg (books sold to pay liabilities), Inkerman (books transferred to S. S. No. 6, Mountain), Kearney (books transferred to Public School Trustees), Keswick (library closed), Morewood (books in care of Public School Trustees), Port Burwell (books transferred to S. S. No. 2, Bayham), Wolfe Island (books transferred to the Teachers' Association, County Frontenac).

The following Libraries did not report for the year 1905:—

Algonquin, Angus, Athens, Atwood,* Avonmore,* Baden, Bancroft, Battersea, Bayham, Beeton, Belfountain, Berwick, Binbrook, Bloomfield, Brougham, Bruce Mines, Burford, Burritt's Rapids, Caistorville, Cheltenham, Chepstow, Clarksburg, Claude, Colborne, Cold Springs, Coldstream, Cookstown, Copper Cliff, Crysler, Dalhousie, Dawson, Depot Harbor, Duart, Dufferin, Dundalk, Dundela, Elgin, Emsdale, Enterprise, Fenella, Finch, Flesherton, Floradale, Fordwich, Forks of the Credit, Freelton, Glen Allen, Glencoe, Gore Bay, Gorrie, Goular's Bay, Haileybury, Harrowsmith, Hastings, Havelock, Hepworth, Highgate, Holland Centre, Holyrood, Inglewood, Jasper, Kars, Kearns, Kinburn, Kintore, Lion's Head, Maberley, Maitland, Melancthon, Metcalfe, Molesworth, Mono Centre, Mono Mills, Moose Creek, Munster, Nairn Centre, North Augusta, Oil Springs, Ophir, Pakenham, Palmerston, Pelee Island, Perth, Poland, Port Dover, Powassan, Primrose, Ripley, Rosemont, Schreiber, Severn Bridge, Shallow Lake, Singhampton, Sprucedale, Sundridge, Tamworth, Thornton, Tiverton, Trenton, Tweed, Vandorf, Vars, Violet Hills, Watson's Corners, Webbwood, West Lorne, Westport, Wyoming.

I find that a practice has grown up among small Libraries of not making an Annual Report to this Department when said Libraries are not entitled to a Legislative Grant for the current year. The most effective method for terminating the practice would be to pass a Regulation under which 5 per cent. of

*Re-established.

the first grant payable to a Library, which had previously defaulted, should be deducted from the grant. I recommend that some action be taken which will terminate the abuse.

The following table shows the locality of every Public and Free Library in the Province on the 1st December, 1906:—

FREE AND PUBLIC LIBRARIES.

Counties and Districts.	Cities, Towns and Villages.
Addington	Camden East.
"	Enterprise.
"	Napanee Mills (Strathcona P. O.)
"	Newburgh.
"	Tamworth.
"	Yarker.
Algoma	Bruce Mines.
"	Chapleau.
"	Goulais Bay.
"	Marksville.
"	Nairn Centre.
"	Ophir.
"	Port Arthur.
"	Rat Portage (Kenora).
"	Sault Ste. Marie.
"	Schrieber.
"	Thessalon.
"	Victoria Mines.
"	Webbwood.
Brant	Brantford.
"	Burford.
"	Glenmorris.
"	New Durham.
"	Paris.
"	Scotland.
"	St. George.
Bruce	Bervie.
"	Cargill.
"	Chepstow.
"	Chesley.
"	Elmwood.
"	Glamis.
"	Hepworth.
"	Holyrood.
"	Kincardine.
"	Lion's Head.
"	Lucknow.
"	Mildmay.
"	Paisley.
"	Pinkerton.
"	Port Elgin.
"	Ripley.
"	Riversdale .
"	Southampton.
"	Teeswater.
"	Tara.
"	Tiverton.
"	Underwood.
"	Walkerton.
"	Westwood.
"	Wiarton.
Carleton	Carp.
"	Corkery.
"	Dawson.
"	Kars.
"	Kinburn.
"	Manotick.
"	Metcalfe.
"	Munster.
"	North Gower.
"	Ottawa.
"	Richmond.
Dufferin	Glen Cross.
"	Grand Valley.
"	Honeywood.
"	Melancthon.
"	Mono Centre.
"	Orangeville.
"	Primrose.
"	Rosemont.
"	Shelburne.
"	Violet Hill.
Dundas	Chesterville.
"	Dundela.
"	Iroquois.
"	Matilda (Iroquois P. O.)
"	Morrisburg.
"	South Mountain.
"	Winchester.
Durham	Bowmanville.
"	Millbrook.
"	Orono.
"	Port Hope.
Elgin	Aylmer.
"	Bayham.
"	Dutton.
"	Port Stanley.
"	Rodney.
"	St. Thomas.
"	Shedden.
"	Sparta.
"	Springfield.
"	West Lorne.
Essex	Amherstburg.
"	Comber.
"	Essex.
"	Harrow.
"	Kingsville.
"	Leamington.
"	Pelee Island.
"	Walkerville.
"	Windsor.
Frontenac	Battersea.

Report since received.

FREE AND PUBLIC LIBRARIES.—*Continued.*

Counties and Districts.	Cities, Towns and Villages.
Frontenac	Garden Island.
"	Harrowsmith.
"	Kingston.
"	Mississippi.
"	Sydenham.
Glengarry	Lancaster.
"	Maxville.
"	Williamstown.
Grenville	Burritt's Rapids.
"	Cardinal.
"	Easton's Corners.
"	Jasper.
"	Kemptville.
"	Maitland.
"	Merrickville.
"	North Augusta.
"	Oxford Mills.
"	Prescott.
"	Spencerville.
Grey	Ayton.
"	Badjeros.
"	Bognor.
"	Chatsworth.
"	Clarksburg.
"	Dromore.
"	Durham.
"	Dundalk.
"	Flesherton.
"	Holland Centre.
"	Holstein.
"	Kemble.
"	Hanover.
"	Lake Charles.
"	Markdale.
"	Meaford.
"	Maxwell and Feversham.
"	Owen Sound.
"	Priceville.
"	Shallow Lake.
"	Singhampton.
"	Thornbury.
Haliburton	Haliburton.
"	Minden.
Haldimand	Caledonia.
"	Canfield.
"	Cayuga.
"	Cheapside.
"	Dufferin (Clanbrassil
"	Dunnville. [P. O.)
"	Hagersville.
"	Jarvis.
"	Nanticoke.
"	Victoria (Caledonia P. O.)
"	York.
Halton	Acton.
"	Burlington.
"	Georgetown.
"	Milton.
"	Oakville.

Counties and Districts.	Cities, Towns and Villages.
Hastings	Bancroft.
"	Belleville.
"	Deseronto.
"	Frankford.
"	Madoc.
"	Marlbank.
"	Stirling.
"	Trenton.
"	Tweed.
Huron	Auburn.
"	Brucefield.
"	Blyth.
"	Brussels.
"	Clinton.
"	Dungannon.
"	Ethel.
"	Exeter.
"	Fordwich.
"	Goderich.
"	Gorrie.
"	Hensall.
"	Molesworth.
"	Seaforth.
"	St. Helen's.
"	Walton.
"	Wingham.
"	Wroxeter.
Kent	Blenheim.
"	Bothwell.
"	Chatham.
"	Dresden.
"	Duart.
"	Highgate.
"	Tilbury.
"	Ridgetown.
"	Romney.
"	Thamesville.
"	Wallaceburg.
"	Wheatley.
Lambton	Arkona.
"	Alvinston.
"	Brigden.
"	Bunyan.
"	Copleston.
"	Forest.
"	Inwood.
"	Oil Springs.
"	Petrolea.
"	Point Edward.
"	Sarnia.
"	Thedford.
"	Watford.
"	Wyoming.
Lanark	Allan's Mills.
"	Almonte.
"	Carleton Place.
"	Dalhousie.
"	Elphin.
"	Lanark.

FREE AND PUBLIC LIBRARIES.—*Continued.*

Counties and Districts.	Cities, Towns and Villages.
Lanark.	Maberley.
"	Middleville.
"	Pakenham.
"	Perth.
"	Poland.
"	Smith's Falls.
"	Watson's Corners.
Leeds	Addison.
"	Athens.
"	Brockville.
"	Elgin.
"	Gananoque.
"	Mallorytown.
"	Newboro'.
"	Westport.
Lennox	Odessa.
"	Bath.
"	Napanee.
Lincoln	Abingdon.
"	Beamsville.
"	Caistorville.
"	Grantham (St. Catharines [P. O.)
"	Merritton.
"	Grimsby.
"	Niagara.
"	Smithville.
"	St. Catharines.
Manitoulin	Cockburn Island.
"	Gore Bay.
"	Little Current.
"	Manitowaning.
Middlesex	Ailsa Craig.
"	Belmont.
"	Coldstream.
"	Dorchester.
"	Glencoe.
"	Komoka.
"	London.
"	Lucan.
"	Melbourne.
"	Mt. Brydges.
"	Newbury.
"	Parkhill.
"	Strathroy.
"	Wardsville.
Muskoka	Bracebridge.
"	Baysville.
"	Gravenhurst.
"	Huntsville.
"	Port Carling.
"	Severn Bridge.
Nipissing	Copper Cliff.
"	Haileybury.
"	Kerns (Milberta P. O.)
"	North Bay.
"	Sturgeon Falls.
"	Thorndoe.
Norfolk	Bloomsburg.
"	Delhi.
Norfolk	Port Dover.
"	Port Rowan.
"	Simcoe.
"	Waterford.
Norhumberland	Brighton.
"	Campbellford.
"	Cobourg.
"	Cold Springs.
"	Colborne.
"	Fenella.
"	Gore's Landing.
"	Grafton.
"	Warkworth.
Ontario	Beaverton.
"	Brooklin.
"	Brougham.
"	Cannington.
"	Claremont.
"	Oshawa.
"	Pickering.
"	Port Perry.
"	Sunderland.
"	Uxbridge.
"	Whitby.
"	Zephyr.
Oxford	Beachville.
"	Drumbo.
"	Embro.
"	Harrington.
"	Ingersoll.
"	Kintore.
"	Plattsville.
"	Norwich.
"	Otterville.
"	Princeton.
"	Tavistock.
"	Tillsonburg.
"	Thamesford.
"	Woodstock.
Parry Sound	Burk's Falls.
"	Callender.
"	Depot Harbor.
"	Emsdale.
"	Parry Sound.
"	Powassan.
"	Rosseau.
"	South River.
"	Sprucedale.
"	Sundridge.
"	Trout Creek.
Peel	Alton.
"	Belfountain.
"	Bolton.
"	Brampton.
"	Caledon.
"	Cheltenham.
"	Claude.
"	Forks of the Credit.
"	Inglewood.

FREE AND PUBLIC LIBRARIES.—*Continued.*

Counties and Districts.	Cities, Towns and Villages.
Peel	Lorne Park.
"	Mono Road.
"	Mono Mills.
"	Port Credit.
"	Streetsville.
Perth	Atwood.
"	Listowel.
"	Milverton.
"	Monkton.
"	Mitchell.
"	Shakespeare.
"	St. Mary's.
"	Stratford.
Peterborough	Hastings.
"	Havelock.
"	Lakefield.
"	Norwood.
"	Peterborough.
Prescott	Hawkesbury.
"	Vankleek Hill.
Prince Edward	Bloomfield.
"	Picton.
Rainy River	Dryden
"	Fort Frances.
Renfrew	Admaston.
"	Anrprior.
"	Burnstown.
"	Cobden.
"	Douglas.
"	Forester's Falls.
"	Pembroke.
"	Renfrew.
"	White Lake.
Russell	Russell.
"	Vars.
Stormont	Avonmore.
"	Berwick.
"	Cornwall.
"	Crysler.
"	Finch.
"	Moose Creek.
"	Newington.
"	Wales.
Simcoe	Alliston.
"	Angus.
"	Barrie.
"	Beeton.
"	Bradford.
"	Coldwater.
"	Collingwood.
"	Cookstown.
"	Creemore.
"	Elmvale.
"	Hillsdale.
"	Lefroy.
"	Midland.
"	Orillia.
"	Penetanguishene.
"	Stayner.
Simcoe	Sunnidale (New Lowell [P.O.)
"	Thornton.
"	Tottenham.
Thunder Bay	Fort William.
Victoria	Bobcaygeon.
"	Cambray.
"	Fenelon Falls.
"	Kinmount.
"	Kirkfield.
"	Little Britain.
"	Lindsay.
"	Manilla.
"	Norland.
"	Oakwood.
"	Omemee.
"	Woodville.
Waterloo	Ayr.
"	Baden.
"	Berlin.
"	Elmira.
"	Floradale.
"	Galt.
"	Hawkesville.
"	Hespeler.
"	Linwood.
"	New Dundee.
"	New Hamburg.
"	Preston.
"	Waterloo.
"	Wellesley.
Welland	Bridgeburg.
"	Fonthill.
"	Fort Erie.
"	Niagara Falls.
"	Niagara Falls South.
"	Port Colborne.
"	Ridgeway.
"	Thorold.
"	Welland.
Wellington	Alma.
"	Arthur.
"	Belwood.
"	Clifford.
"	Drayton.
"	Elora.
"	Erin.
"	Ennotville.
"	Fergus.
"	Glen Allan.
"	Guelph.
"	Harriston.
"	Morriston.
"	Mount Forest.
"	Palmerston.
"	Rockwood.
"	Speedside.
Wentworth	Ancaster.
"	Binbrook.
"	Dundas.

FREE AND PUBLIC LIBRARIES.—*Concluded.*

Counties and Districts.	Cities, Towns and Villages.
Wentworth	Freelton.
"	Hamilton.
"	Mill Grove.
"	Lynden.
"	Saltfleet (Stony Creek [P. O.)
"	Waterdown.
York	Aurora.
"	Bracondale.
"	Deer Park.
"	Don.
"	East Toronto.
"	Highland Creek.
"	Islington.
"	King.
"	Maple.
"	Markham.
"	Mount Albert.
"	Newmarket.
"	Queensville.
"	Richmond Hill.
"	Scarboro'.
York	Schomberg.
"	Stouffville.
"	Thornhill.
"	Toronto.
"	Toronto Junction.
"	Unionville.
"	Vandorf.
"	Weston.
"	Woodbridge.

The above list may be classified as follows:—

Public Libraries reporting	242
Free Libraries reporting	134
Public Libraries not reporting	92
Free Libraries not reporting	16
Public Libraries incorporated since 1st December, 1905	4
Totals	488

I. PUBLIC LIBRARIES (NOT FREE).

The following extracts are taken from the annual reports for the year ending 31st December, 1905. (For details see Table A).

1. Classification of Public Libraries Reporting.

Public Libraries with reading rooms	83
Public Libraries without reading rooms	159
Total	242

2. Public Libraries—Receipts and Balances on Hand.

The total receipts of 242 Public Libraries was	$53,085 17
Balances on hand	5,910 94

3. Public Libraries—Expenditure.

The total expenditure of 242 Public Libraries was	$47,174 23

4. Public Libraries—Assets and Liabilities.

Assets of 242 Public Libraries	$373,468 51
Liabilities of 242 Public Libraries	6,640 91

5. Number of Members in Public Libraries.

242 Public Libraries have 28,748 members.

6. No. of Volumes in Public Libraries and No. of Volumes Issued.

Number of volumes in 242 Libraries	473,160
Number of volumes issued in 242 Libraries	673,958

7. Reading Rooms in Public Libraries.

83 Public Libraries reported having reading rooms.
16 Libraries reported having periodicals for circulation.
99 Libraries subscribed for 1,899 newspapers and periodicals.

TABLE A. Receipts, Expenditures, Assets and Liabilities of Public Libraries, (not Free) for the year ending 31st December, 1905.

Number.	Public Libraries.	Receipts.						Expenditure.	Balance on hand.	Number of members.	Number of volumes in library.	Number of volumes issued.	Number of newspapers and periodicals.	Assets.	Liabilities.
		Legislative grants.	Municipal grants.	Members' fees.	Balances and other sources.	Total receipts.									
		$ c.	$ c.	$ c.	$ c.	$ c.		$ c.	$ c.					$ c.	$ c.
1	Abingdon	3 98			32 13	36 11		36 11		112	319	363		202 36	
2	Admaston		20 00	12 00	40 92	72 92		62 12	10 80	102	1,262	650		660 10	40 00
3	Addison			25 64	90 66	116 30		95 11	21 19	111	459	650		369 96	
4	Allan's Mills	11 89		9 75		21 64		17 05	4 59	103	555	128		360 00	
5	Alma	44 22	20 00	22 00	26 87	113 09		103 36	9 73	117	1,476	1,872	11	648 00	
6	Alliston		25 00	57 40	78	83 18		54 64	28 54	150	2,042	2,935		1,562 25	18 75
7	Almonte	78 24	150 00	113 50	26 59	368 32		368 33		133	3,590	2,891	18	3,966 44	
8	Amherstburg	127 72	150 00	103 55	355 00	736 27		501 74	234 53	212	3,592	3,886	20	7,942 53	
9	Ancaster			9 65	30 40	40 05		33 59	6 46	157	702	792	8	404 00	
10	Arkona	21 96	20 00	31 96	11 34	85 26		77 98	7 28	104	2,414	3,000	12	1,300 00	29 85
11	Arthur	53 77	200 00	125 50	115 43	494 70		470 36	24 34	107	2,869	2,656	26	2,251 78	
12	Auburn		25 00	26 60	52 52	104 12		100 12	4 00	102	1,134	909	8	802 83	110 00
13	Ayton		25 00	60 96	13 93	99 89		52 47	47 42	120	657	941		426 13	
14	Badjeros			9 50	10 02	19 52		9 82	9 70	101	*	*		390 00	15 00
15	Barrie	55 11	200 00	266 40	147 72	669 23		666 71	2 52	254	4,986	11,629	20	5,102 04	537 35
16	Baysville		10 00		2 96	12 96		12 96		52	353	497		287 00	
17	Beachville			31 00	213 31	244 31		239 13	5 18	120	999	1,261		689 80	
18	Beamsville	44 13	25 00	57 55	470 06	596 74		206 73	390 01	101	2,990	3,723	7	2,398 79	
19	Beaverton	25 00	90 00	82 65	66 99	264 64		262 47	2 17	185	1,549	1,723	26	1,313 95	
20	Belmont			18 80	9 82	28 62		24 80	3 82	67	1,207	459		917 58	
21	Belwood	52 57	20 00	27 80	18 73	119 10		117 88	1 22	103	1,683	2,954		1,393 20	
22	Bervie		30 00	12 50	11 57	54 07		54 00	7	106	1,581	627		820 00	21 97
23	Blenheim	39 17	140 00	120 40	42 11	341 68		341 68		151	4,127	5,531	22	2,600 00	70 54
24	Bloomsburg				8 93	8 93		8 60	33	40	195	160		55 00	
25	Blyth	18 36	35 00	24 00	37 57	114 93		55 95	58 98	103	1,758	1,550		670 00	
26	Bobcaygeon	48 70	60 00	64 50	71 99	245 19		238 92	627	136	2,528	3,607	18	2,207 70	30 00
27	Bognor			37 00	10 80	47 80		46 82	98	102	1,383	819		910 00	
28	Bolton	49 27	65 00	65 00	51 84	231 11		231 11		130	2,465	3,899	20	1,643 02	20 54
29	Bowmanville	11 95	125 00	154 00	205 93	496 88		474 56	22 32	136	3,528	6,332	33	3,650 00	3 35
30	Bracondale	100 00	25 00	14 65	112 91	282 56		243 30	39 26	205	1,109	1,117		801 90	
31	Bradford	19 28	25 00	64 00	10 10	118 38		115 79	2 59	123	2,467	3,258		1,883 15	32 50

32	Bridgeburg	58 80	60 00	30 75	25 80	175 35	134 50	40 85	113	1,288	2,860	.....	1,146 14	202 97	
33	Brigden	24 90	15 00	29 61	32 25	101 76	101 76	.....	109	954	1,368	.....	556 48	9 51	
34	Brooklin	40 07	30 00	32 75	47 47	150 29	144 87	5 42	176	2,332	2,668	3	1,330 00	.....	
35	Brucefield	40 61	25 00	44 70	26 69	137 00	120 13	16 87	100	978	1,954	.....	621 04	.....	
36	Bunyan	30 58	5 00	12 00	103 64	151 22	125 07	26 15	146	647	708	.....	482 20	.....	
37	Burlington	63 06	75 60	50 50	127 22	315 78	227 74	88 04	101	2,782	4,346	8	1,999 00	.....	
38	Burnstown	23 73	.....	4 86	15 49	44 08	43 89	19	113	912	699	.....	343 89	.....	
39	Callender	.....	.....	12 25	55 14	67 39	67 39	.....	29	422	889	.....	300 00	22 13	
40	Cambray	44 57	50 00	14 20	8 87	117 64	116 04	1 60	118	1,138	2,004	.....	815 67	.....	
41	Campbellford	46 98	130 00	128 84	80 37	386 19	386 19	.....	183	4,451	5,035	22	2,525 00	60 85	
42	Canfield	13 00	5 00	2 75	34 78	55 53	54 29	1 24	109	777	774	.....	536 15	.....	
43	Cannington	34 74	25 00	69 25	46 02	175 01	154 77	20 24	140	2,384	2,454	12	2,083 76	.....	
44	Cargill	118 81	25 00	27 75	111 72	286 28	232 06	54 22	111	2,214	1,997	.....	1,856 65	.....	
45	Carp	25 15	15 00	24 10	26 94	91 19	81 97	9 22	108	1,379	1,800	.....	787 98	.....	
46	Chapleau	6 00	.....	90 81	1,307 21	1,404 02	1,158 91	245 11	108	1,911	235	16	4,513 25	1,000 00	
47	Chatsworth	35 77	.....	47 00	51 66	134 43	134 43	.....	107	2,646	5,320	12	1,895 59	.....	
48	Cheapside	26 46	.....	19 50	31 70	80 66	68 96	11 70	106	1,637	970	.....	1,186 70	.....	
49	Claremont	39 42	40 00	25 70	11 86	116 98	116 98	.....	101	2,662	2,204	.....	2,015 02	7 28	
50	Cobourg	142 90	100 00	215 50	62 31	520 71	512 10	8 61	266	4,070	20,704	36	2,456 61	48 80	
51	Cockburn Island	.....	.....	8 00	2 01	10 01	10 01	.....	37	280	455	.....	170 82	127 61	
52	Coldwater	15 85	.....	52 25	19 27	117 37	105 17	12 20	105	1,848	2,328	13	1,374 62	.....	
53	Comber	85 51	91 87	51 50	4 63	233 51	208 30	25 21	103	1,979	2,223	20	1,689 61	.....	
54	Copleston	.....	.....	7 85	.....	7 85	7 85	.....	50	1,287	1,175	.....	775 00	.....	
55	Deer Park	.....	25 00	60 75	339 90	425 65	403 40	22 25	180	532	212	.....	505 00	113 00	
56	Dorchester	11 45	.....	11 60	71 40	124 45	62 21	62 24	131	1,076	905	.....	777 82	.....	
57	Douglas	5 48	.....	22 75	2 40	30 63	22 75	7 88	52	1,070	1,089	.....	765 95	.....	
58	Dresden	25 58	60 00	26 50	15 58	127 66	127 50	16	40	1,777	*	.....	1,240 94	1 50	
59	Drumbo	58 56	5 00	59 00	33 45	186 01	167 28	18 73	101	1,336	2,471	.....	820 00	.....	
60	Dromore	.....	.....	10 50	4 40	14 90	14 90	.....	33	577	273	.....	289 59	.....	
61	Dryden	.....	.....	37 00	82 17	119 17	27 75	91 42	65	874	2,500	.....	1,035 00	.....	
62	Dundas	124 92	350 00	192 75	191 34	859 01	855 33	3 68	217	8,025	8,053	37	6,613 00	.....	
63	Dungannon	.....	35 00	56 37	8 00	99 30	90 43	8 87	110	1,871	1,769	.....	405 00	.....	
64	Dunnsville	49 95	100 00	52 00	53 32	255 27	201 42	53 85	127	2,876	6,363	.....	2,103 85	.....	
65	Durham	30 99	100 00	61 92	107 96	300 87	258 86	42 01	114	3,831	4,026	27	3,800 00	.....	
66	Faston's Corners	.....	.....	15 00	72 31	87 31	66 25	21 06	105	1,157	766	.....	757 26	.....	
67	East Toronto	100 00	100 00	29 00	12 85	241 85	241 85	.....	104	827	1,701	.....	623 14	.....	
68	Elmvale	25 00	.....	36 45	2 80	64 25	63 75	50	117	1,821	2,658	.....	1,000 00	30 45	
69	Elmwood	31 22	15 00	13 32	13 69	103 23	93 05	10 18	136	809	1,132	.....	462 96	.....	
70	Elora	83 29	94 46	115 30	203 93	526 98	180 48	46 50	151	9,562	6,349	19	7,550 00	.....	
71	Elphin	.....	.....	4 70	.....	4 70	4 70	.....	40	355	200	.....	200 00	.....	
72	Embro	59 22	35 00	74 25	75 46	243 93	222 11	21 82	106	5,513	5,343	16	4,464 69	.....	
73	Ennotville	60 00	25 00	15 00	89 74	189 74	165 70	24 04	260	3,261	766	9	2,820 00	.....	
74	Essex	58 60	175 00	70 50	76 40	380 50	347 40	33 10	140	2,980	3,005	26	2,706 50	.....	
75	Ethel	.....	20 00	14 00	30 18	64 18	56 75	7 43	101	1,511	1,612	.....	900 00	30 00	

* Not reported.

TABLE A.—Receipts, Expenditures, Assets and Liabilities, etc.—*Continued.*

Number.	Public Libraries.	Receipts.					Expenditure.	Balance on hand.	Number of members.	Number of volumes in library.	Number of volumes issued.	Number of newspapers and periodicals.	Assets.	Liabilities.
		Legislative grants.	Municipal grants.	Members' fees.	Balances and other sources.	Total receipts.								
		$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.					$ c.	$ c.
76	Fenelon Falls	50 24	125 00	100 50	231 42	507 16	475 78	31 38	107	3,868	3,487	30	2,740 00	25 00
77	Fergus	60 54	75 00	70 50	28 24	234 28	224 28	10 00	113	5,262	3,299	15	6,124 00	10 05
78	Fonthill	44 74	50 00	28 25	53 12	176 11	136 02	40 09	124	2,743	2,396	12	2,620 07	.....
79	Forester's Falls	25 00	15 00	31 88	29 29	101 17	100 72	45	201	667	2,404	.....	351 50	.....
80	Fort Erie	39 42	35 00	17 00	20 00	111 42	107 70	3 72	101	2,901	3,484	.....	1,775 00	4 17
81	Fort Frances	36 42	.....	39 50	140 52	216 44	164 04	52 40	105	1,339	2,514	9	1,154 62	.....
82	Frankford	.....	100 00	114 00	60 80	274 80	231 20	43 60	114	223	847	14	149 10	.....
83	Gananoque	122 38	250 00	205 00	199 78	777 16	777 16	.....	203	3,833	10,010	21	2,768 78	73 61
84	Glamis	.....	15 00	8 00	40 00	63 00	62 65	35	32	677	976	.....	422 50	35 00
85	Glen Cross	75	.....	2 75	22 71	26 21	23 81	2 40	11	193	.....	.....	.....	.....
86	Glenmorris	73 69	50 00	29 30	7 60	160 59	128 15	32 44	104	2,535	1,002	11	2,029 50	.....
87	Gore's Landing	25 21	.....	55 03	61 15	141 39	139 81	1 58	114	1,045	939	.....	971 55	.....
88	Haliburton	34 10	25 00	26 50	38 35	123 95	102 76	21 19	106	690	1,767	.....	467 00	46 09
89	Hanover	17 37	50 00	16 90	4 26	88 53	76 63	11 90	144	934	1,349	.....	686 72	3 75
90	Harrington	15 00	.....	25 50	44 02	84 52	81 07	3 45	102	954	2,394	.....	300 00	.....
91	Harrow	7 44	75 00	29 00	40 00	151 44	124 00	27 44	60	1,077	2,335	18	523 50	.....
92	Hawkesburg	95 28	.....	4 25	82 80	182 33	139 25	43 08	134	522	2,002	.....	275 08	72 00
93	Hawkesville	.....	.....	.....	.....	.....	.....	.....	80	.....	.....	.....	.....	.....
94	Highland Creek	.....	.....	34 25	53 13	87 38	85 64	1 74	108	1,521	927	.....	1,290 84	.....
95	Hillsdale	50 00	.....	73 95	40 44	164 39	132 26	32 13	111	909	2,317	.....	495 09	.....
96	Holstein	50 03	.....	36 50	189 18	275 71	199 01	76 70	155	1,035	2,915	.....	712 54	.....
97	Honeywood	25 94	.....	27 25	113 07	166 26	114 25	52 01	108	487	907	10	210 00	.....
98	Huntsville	72 60	175 00	66 00	11 70	325 30	321 34	3 96	113	3,274	6,222	16	2,380 00	.....
99	Inwood	.....	10 00	22 75	79 36	112 11	108 52	3 59	70	514	916	.....	344 93	25 50
100	Islington	42 17	20 00	41 30	4 53	108 00	107 62	38	132	1,830	2,205	9	1,007 00	.....
101	Jarvis	28 58	.....	98 00	88 29	214 87	213 42	1 45	110	3,184	2,076	17	1,550 00	172 00
102	Kemble	.....	.....	16 80	50 40	67 20	62 64	4 56	104	1,004	754	.....	695 60	20 00
103	King	.....	.....	16 50	10 00	26 50	10 00	16 50	61	1,544	2,572	.....	*	.....
104	Kingston	115 12	400 00	304 10	23 52	842 74	831 65	11 09	259	5,906	27,921	43	6,380 00	.....
105	Kinmount	38 34	50 00	33 75	83 61	205 70	201 82	3 88	105	1,769	2,973	.....	1,329 05	25 00
106	Kirkfield	80 45	50 00	32 00	35 12	197 57	192 92	4 65	124	1,658	971	.....	1,017 50	10 40

107	Komoka	39 00	10 00	70 00	9 29	128 29	127 69	60	103	414	644		240 00	
108	Lake Charles	19 00		25 00	5 50	49 50	28 00	21 50	100	2,088	1,318		1,460 80	
109	Lefroy	33 85	20 00	22 00	74 47	150 32	135 96	14 36	127	698	2,020		375 00	30 00
110	Linwood			10 00	61 01	71 01	43 28	27 73	25	709	400		790 00	
111	Little Britain	52 10	50 00	29 55	41 51	173 16	173 16		152	2,172	2,295	20	1,861 49	3 17
112	Lorne Park		10 00	12 42	21 59	44 01	33 01	11 00	32	483	232		306 00	
113	Lucan	25 58	50 00	16 45		92 03	62 10	29 93	83	2,126	750		1,100 00	
114	Lyden	7 50	15 00	17 00	20 17	59 67	55 65	4 02	79	1,390	1,242		715 89	
115	Madoc	61 11	50 00	69 85	150 25	331 21	331 21		137	2,064	5,454		1,465 00	96 18
116	Mallorytown			27 75	6 46	34 21	34 21		105	1,392	1,896		1,025 44	28 79
117	Manilla	59 88	50 00	17 10	87 10	214 08	198 83	15 25	106	2,796	1,615	1	2,103 00	
118	**Manitowaning				300 00	300 00		300 00					300 00	
119	Manotick	1 25		21 50	67 05	89 80	89 80		112	1,830	2,341		1,230 89	27 55
120	Maple	28 35	25 00	19 25	58 23	130 83	115 65	15 18	115	791	1,810	10	559 75	
121	Markham	40 87		55 00	267 35	363 22	256 87	106 35	115	3,223	4,618		5,556 35	
122	Marksville	20 00	25 00	21 39		66 39	66 39		102	871	1,244		885 46	
123	Maxville			2 35	42 76	45 11	42 50	2 61	65	387	575		258 00	
124	†Maxwell and Feversham	74 15	10 00	85 00	32 40	201 55	201 55		70	383	*		890 00	15 80
125	Meaford	68 90	125 00	137 75	117 99	449 64	343 40	106 24	209	2,586	4,387	25	2,150 00	
126	Melbourne		20 00	24 00	131 89	175 89	174 35	1 54	96	1,179	959		600 00	90 00
127	Middleville			12 65	15 69	28 34	16 47	11 87	60	675	608		325 00	
128	Mildmay		45 00	19 80	23 45	88 25	87 52	73	118	2,163	1,402		860 00	11 31
129	Millgrove	12 57		6 50	26 32	45 39	28 19	17 20	124	558	1,122	4	341 03	
130	Milton	28 08		36 25	114 44	178 77	158 74	20 03	123	3,563	3,000	15	4,400 00	
131	Minden	28 06	25 00	22 75	13 19	89 00	88 71	29	101	1,311	2,507		986 44	16 50
132	Mississippi			24 10		24 10		24 10	63	1,203	907		700 00	
133	Monkton	5 82	20 00	32 80		58 62	55 72	2 90	106	1,521	1,965		1,000 00	
134	Mono Road	19 24		33 25	25 00	77 49	77 22	27	103	1,757	2,749		1,025 00	
135	Morrisburg	74 89	75 00	154 90	103 53	408 32	408 32		121	2,851	3,973	30	1,425 00	93 56
136	Morriston	10 89		33 25	12 99	57 13	55 51	1 62	104	1,295	1,705	2	774 75	
137	Mount Albert		25 00	14 35		39 35	26 02	13 33	104	868	1,954		635 08	
138	Mount Brydges		20 00	17 70	23 45	61 15	61 15		91	921	851		556 56	59 99
139	Mount Forest	45 40	75 00	89 15	30 84	240 39	240 39		133	3,158	4,300	14	3,188 24	2 66
140	Nanticoke			13 25	18 52	31 77	26 77	5 00	105	2,010	1,196		1,427 45	
141	Napanee	197 76	250 00	195 50	106 27	749 53	688 52	61 01	191	4,919	11,393	41	3,661 01	
142	Napanee Mills (Strathcona)			8 75	64 36	73 11	68 58	4 53	100	1,315	1,191	9	1,928 44	
143	Newboro			4 70	155 84	160 54	145 18	15 36	59	435	523		329 22	25 00
144	Newburgh	30 25	40 00	44 00	10 40	124 65	116 90	7 75	100	1,964	1,263	19	1,222 00	131 75
145	Newbury			9 75		9 75	9 75		54	788	1,103		337 00	47 06
146	New Dundee			6 90	30 60	37 50	37 10	40	50	720	606		431 40	
147	New Durham			19 35	74 82	94 17	84 14	10 03	107	981	1,040	1	501 34	70 00

*Not reported. †Two years' report. ** Books destroyed by fire, 10th April 1905.

TABLE A.—Receipts, Expenditures, Assets and Liabilities, etc.—*Continued.*

Number.	Public Libraries.	Receipts.					Expenditure.	Balance on hand.	Number of members.	Number of volumes in library.	Number of volumes issued.	Number of newspapers and periodicals.	Assets.	Liabilities.
		Legislative grants.	Municipal grants.	Members' fees.	Balances and other sources.	Total receipts.								
		$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.					$ c.	$ c.
148	New Hamburg	.....	90 00	58 50	31 05	179 55	179 55	.....	116	3,135	4,016	.....	2,022 13	46 00
149	Niagara	85 84	75 00	121 89	58 79	341 52	341 52	.....	123	6,110	10,589	28	5,514 00	11 94
150	Norland	.....	60 00	14 25	.....	74 25	69 25	5 00	37	561	513	.....	445 40	113 02
151	North Gower	25 00	.....	35 00	52 58	112 58	106 09	6 49	102	2,022	2,240	.....	755 00	.....
152	Norwich	70 03	50 00	76 00	25 44	221 47	220 41	1 06	107	2,060	3,305	17	1,340 00	.....
153	Norwood	19 75	50 00	47 90	47 32	164 97	159 72	5 25	175	2,357	1,819	13	1,426 81	.....
154	Oakville	53 27	100 00	80 00	28 60	261 87	260 96	91	118	3,660	2,769	11	2,914 20	.....
155	Oakwood	37 82	50 00	33 45	95 43	216 70	216 70	.....	103	1,637	1,579	22	2,019 84	10 18
156	Odessa	25 83	.....	29 50	147 00	202 33	202 33	.....	118	1,091	2,469	13	528 00	1 81
157	Omemee	42 12	100 00	43 00	48 98	234 10	226 82	7 28	102	847	1,149	19	637 00	.....
158	Orillia	110 58	200 00	278 75	41 12	630 45	629 16	1 29	291	4,618	9,122	23	4,600 00	165 00
159	Orono	27 04	.....	24 30	77 03	128 37	100 61	27 76	100	1,343	1,952	.....	1,135 54	65 00
160	Owen Sound	62 46	100 00	220 70	26 20	409 36	409 36	.....	221	6,112	9,384	29	5,000 00	.....
161	Oxford Mills	.....	.....	29 75	75 46	105 21	105 21	.....	122	1,485	1,874	.....	1,028 24	.....
162	Peterborough	190 39	.....	541 35	701 00	1,432 74	1,136 09	296 65	401	10,393	13,945	88	12,636 74	240 00
163	Petrolia	34 09	.....	68 40	2 06	104 55	93 20	11 35	110	1,024	2,812	.....	774 00	51 00
164	Pickering	32 19	40 00	29 95	28 76	130 90	94 47	36 43	110	1,714	2,295	19	1,086 48	25 00
165	Pinkerton	4 98	30 00	20 00	28 85	83 83	61 36	22 47	100	1,646	1,541	.....	1,170 21	.....
166	Plattsville	21 37	10 00	38 85	55 80	126 02	125 47	55	119	1,318	3,120	.....	890 00	.....
167	Point Edward	75 00	.....	92 50	16 74	184 24	105 70	78 54	107	3,006	2,881	.....	4,075 29	.....
168	Port Arthur	136 73	786 47	172 75	80 97	1,176 92	1,145 03	31 89	269	2,674	6,915	24	3,468 18	.....
169	Port Credit	31 35	20 00	23 00	4 18	78 53	72 46	6 07	106	1,801	1,517	.....	1,166 12	.....
170	Port Elgin	29 57	40 00	27 50	9 04	106 11	95 35	10 76	110	3,150	3,459	18	2,015 00	.....
171	Port Hope	66 07	75 00	325 00	274 01	740 08	687 46	52 62	212	1,608	9,929	39	3,600 00	.....
172	Port Perry	27 73	105 00	100 50	130 70	363 93	363 93	.....	150	2,237	3,899	34	1,700 00	17 78
173	Port Stanley	23 74	25 00	36 00	1 91	86 65	85 66	99	108	1,312	1,886	.....	1,000 00	.....
174	Priceville	.....	.....	9 00	3 07	12 07	5 00	7 07	27	335	580	.....	207 79	57 81
175	Princeton	.....	10 00	34 55	48 00	92 55	74 04	18 51	101	2,052	1,670	.....	1,380 00	.....
176	Queensville	27 30	50 00	59 50	54 25	191 05	191 00	5	115	2,041	3,237	.....	1,322 97	4 03
177	Rat Portage (Kenora)	113 22	500 00	158 00	2,300 18	3,071 40	2,979 47	91 93	174	4,291	8,444	27	3,282 35	586 90
178	Richmond	28 82	.....	44 00	4 05	76 87	75 95	92	108	1,540	1,515	.....	1,159 31	5 00

179	Ridgetown	76 52	40 00	111 50	101 45	329 47	326 92	2 55	151	4,026	4,206	31	4,775 00			
180	Riversdale	19 81	25 00	6 50	9 00	60 31	54 86	5 45	122	1,070	952		744 1			
181	Rockwood	14 33		58 75	122 61	190 69	176 06	14 63	114	1,621	1,963	17	580 00			
182	Rodney		45 00	24 50	25 73	95 23	92 91	2 32	147	1,194	1,777		1,151 79			
183	Romney	36 31	40 00	30 60	37 96	144 87	129 01	15 86	103	2,633	2,104		2,048 18	36 00		
184	Rosseau		10 00	13 60	19 54	43 14	43 14		60	549	405		232 50	8 09		
185	Russell	63 01		65 60	122 70	251 31	250 27	1 04	120	1,783	1,838	27	2,812 33	220 00		
186	Saltfleet (Stoney Creek, P. O.	100 13	50 00	33 25	12 49	195 87	156 21	39 66	125	1,208	2,272		1,121 07			
187	Sault Ste. Marie	140 60	480 00	134 75	165 79	921 14	831 66	89 48	539	2,808	16,293	26	1,137 00			
188	Scarboro'	73 80		78 97	21 98	174 75	163 31	11 44	102	5,726	2,839	7	4,153 81			
189	Schomberg			100 00		100 00	100 00		110	108	56		115 00			
190	Scotland	47 65		51 55	81 31	180 51	148 66	31 85	127	1,381	2,466	20	1,005 23			
191	Shakespeare			25 00	76 08	101 08	82 57	18 51	50	1,589	1,846	5	1,042 60	45 00		
192	Shedden	29 19		55 40	71 67	156 26	140 99	15 27	105	1,458	1,779		765 64			
193	Smithville	19 29	40 00	40 50	53 92	183 71	183 71		136	999	2,640		815 00	1 91		
194	Southampton	39 92	20 00	50 50	73 58	184 00	127 50	56 50	138	4,747	2,528	11	3,714 35			
195	SouthMountain			73 00	91 52	164 52	160 99	3 53	134	221	776		151 99	12 50		
196	South River			24 05	93 33	117 38	40 50	76 88	101	960	1,196		675 40			
197	Sparta	40 21		29 50	97 48	167 19	126 28	40 91	102	2,516	2,681		1,956 96			
198	Speedside	19 86	20 00	25 65	78 34	173 85	149 60	24 25	121	355	1,199		251 79			
199	Spencerville			7 25		7 25	7 25		130	621	799		300 00	81 70		
200	Springfield			10 00	21 25	31 25	1 23	30 02	35	1,620	1,116		1,055 02	26 40		
201	Stirling	25 07	40 00	63 50	8 05	136 62	135 33	1 29	100	709	2,405		421 47	15 03		
202	Strathroy	144 30	75 00	162 50	412 70	794 50	794 50		288	6,554	23,737	26	5,925 00	5 65		
203	Sturgeon Falls			106 00	217 00	323 00	311 51	11 49	106	303	1,396		172 75	42 00		
204	St. George	33 32	50 00	70 30	347 06	500 68	462 66	38 02	134	4,822	4,472	10	5,541 28			
205	St. Helen's	20 39	35 00	14 25	17 28	86 92	77 61	9 31	105	1,789	991		1,340 00			
206	Sunderland	73 64	55 00	13 75	77 72	220 11	220 11		111	2,073	1,233	25	1,596 00	33 34		
207	Sunnidale (New Lowell)		15 00	28 00	71 98	114 98	113 10	1 88	112	862	898		573 00			
208	Sydenham	78 35	25 00	23 35	117 51	244 21	244 08	13	147	781	4,808	18	395 00			
209	Tavistock	135 71		85 50	440 66	661 87	425 85	236 02	115	3,657	5,709	23	2,042 45			
210	Teeswater	41 38	50 00	95 20	428 62	615 20	362 12	253 08	191	4,070	4,448	21	2,250 00			
211	Thamesford	29 79	25 00	49 40	48 89	153 08	152 47	61	126	1,880	1,892	14	1,448 92			
212	Thamesville	38 64	150 00	101 50	214 69	504 83	421 36	83 47	109	3,608	3,226	16	3,195 00	175 00		
213	Thedford	53 00		51 00	10 95	114 95	114 95		102	2,310	4,733		1,195 00	73		
214	Thornbury	21 45	25 00	23 75	26 16	96 36	70 06	26 30	120	1,339	2,873		505 00			
215	Tilbury	17 90	100 00	67 00	35 39	220 29	220 29		105	2,038	3,630	15	1,531 89	29 39		
216	Tillsonburg	63 54	150 00	117 50	127 72	458 76	433 60	25 16	122	2,925	5,860	19	2,000 00	123 70		
217	Toronto Junction	91 67	350 00	154 50	225 44	821 61	616 17	205 44	200	3,800	5,392	36	2,800 00			
218	Trout Creek			9 75		9 75	9 75		24	1,319	318		1,018 84			
219	Underwood	40 01	35 00	32 00	8 27	115 28	114 59	69	128	2,788	2,803		1,158 46			
220	Unionville	38 74	30 00	28 03	40 07	136 84	131 40	5 44	102	804	2,365		578 22			
221	Vankleek Hill	22 92		51 50	100 51	174 93	153 35	21 58	103	1,236	2,072	1	1,115 74			

TABLE A.—Receipts, Expenditures, Assets and Liabilities, etc.—*Concluded.*

Number.	Public Libraries.	Receipts.					Expenditure.	Balance on hand.	Number of members.	Number of volumes in library.	Number of volumes issued.	Number of newspapers and periodicals.	Assets.	Liabilities.
		Legislative grants.	Municipal grants.	Members' fees.	Balances and other sources.	Total receipts.								
		$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.					$ c.	$ c.
222	Victoria (Caledonia)	49 79	.....	13 00	7 73	70 52	15 00	55 52	104	2,585	1,132	.....	1,868 57	.....
223	Victoria Mines	36 85	45 00	57 00	30	139 15	123 33	15 82	104	401	844	.....	263 62	.....
224	Wales	.....	.....	51 00	5 75	56 75	56 75	.....	124	1,252	2,848	.....	864 77	5 75
225	Walkerton	53 22	220 00	99 60	96 78	469 60	458 23	11 37	119	3,124	4,560	18	2,030 10	50 00
226	Walton	8 50	25 00	21 75	14	55 39	45 70	9 69	105	1,131	2,556	12	371 00	107 00
227	Wardsville	.....	30 00	14 40	27 21	71 61	64 51	7 10	78	1,394	892	.....	925 00	.....
228	Warkworth	44 08	35 00	55 20	54 38	188 66	141 97	46 69	103	1,127	757	20	720 00	177 66
229	Waterdown	3 75	30 00	17 25	50 59	101 59	94 98	6 61	116	1,518	2,461	.....	467 24	.....
230	Welland	81 92	150 00	77 25	62 56	371 73	303 41	68 32	173	4,028	5,013	34	4,670 11	.....
231	Wellesley	49 52	.....	31 00	98 27	178 79	172 53	6 26	124	1,705	2,957	.....	1,212 74	.....
232	Weston	34 02	60 00	51 25	158 25	303 52	250 64	52 88	127	3,428	4,736	28	2,400 00	25
233	Wheatley	11 69	80 00	11 50	26 34	129 53	129 53	.....	114	1,692	3,876	.....	1,125 00	24 00
234	Whitby	56 49	25 00	78 00	118 08	277 57	269 48	8 09	150	3,407	5,228	.....	2,150 00	.....
235	Williamstown	32 03	35 00	26 75	54 08	147 86	104 20	43 66	106	1,760	2,131	.....	1,506 79	55 00
236	Winchester	36 55	100 00	61 00	108 90	306 45	306 45	.....	247	737	2,846	16	800 00	17 50
237	***Wolfe Island	.....	.....	3 40	2 24	5 64	5 00	64	32	337	126	.....	220 00	.....
238	Woodbridge	30 38	.....	25 00	63 41	118 79	97 59	21 20	120	1,957	1,317	14	1,731 65	.....
239	Woodville	30 89	75 00	85 90	31 47	223 26	184 49	38 77	124	2,368	2,430	20	1,225 00	.....
240	Yarker	.....	100 00	5 50	22 62	128 12	110 13	17 99	60	522	592	.....	202 83	.....
241	York	.....	35 00	13 00	130 20	178 20	178 20	.....	128	997	.....	.....	637 00	20 82
242	Zephyr	.....	25 00	12 00	45 90	82 90	82 20	70	121	1,330	766	.....	706 71	70 18
	Total	8,354 22	11,537 80	12,852 88	20,340 27	53,085 17	47,174 23	5,910 94	28,748	473,160	673,958	1,899	373,468 51	6,640 91

*** Closed, Books transferred to Teachers' Institute, County Frontenac.

II. PUBLIC LIBRARIES, FREE.

The following extracts are taken from the annual reports for the year ending 31st December, 1905. (For details see Table B).

1. Classification of Free Libraries Reporting.

Free Libraries, with reading rooms	91
Free Libraries, without reading rooms	43
Total	134

2. Free Libraries—Receipts and Balances on Hand.

The total receipts of 134 Free Libraries was	$174,323 66
Balances on hand	22,819 34

3. Free Libraries—Expenditure.

The total expenditure of 134 Free Libraries was	$151,504 32

4. Free Libraries—Assets and Liabilities.

Assets of 134 Free Libraries	$1,223,171 89
Liabilities of 134 Free Libraries	129,626 19

5. Number of Readers in Free Libraries.

134 Free Libraries report having had 124,159 readers.

6. No. of Volumes in Free Libraries, and No. of Volumes Issued.

Number of volumes in 134 Free Libraries	684,539
Number of volumes issued in 134 Free Libraries	1,807,122

7. Reading Rooms in Free Libraries.

91 Free Libraries reported having reading rooms.
96 Free Libraries subscribed for 4,319 newspapers and periodicals.

TABLE B.—Receipts, Expenditure, Assets and Liabilities of Public Libraries (Free) for the year ending 31st December, 1905.

Number.	Free Libraries.	Receipts.					Expenditure.	Balance on hand.	Number of members.	Number of volumes in library.	Number of volumes issued.	No. of newspapers and periodicals.	Assets.	Liabilities.
		Legislative grants.	Municipal grants.	Members' fees.	Balances and other sources.	Total receipts.								
		$ c	$ c.	$ c.	$ c.	$ c.	$ c	$ c					$ c.	$ c.
1	Acton	48 15	150 00	.....	64 32	262 47	247 67	14 80	276	2,238	2,985	.....	2,364 04	.....
2	Ailsa Craig	70 16	100 00	5 60	98 24	274 00	192 81	81 19	150	2,656	3,314	.....	2,000 00	.....
3	Alton	15 51	15 00	11 45	164 10	206 06	196 41	9 65	198	4,625	3,957	.....	4,724 63	.....
4	Alvinston	.....	.....	17 45	702 56	720 01	698 06	21 95	95	1,724	1,739	.....	1,200 00	180 35
5	Arnprior	44 73	100 00	.....	56 55	201 28	126 27	75 01	192	2,561	4,039	.....	1,475 01	.....
6	Aurora	7 38	100 00	.....	283 76	391 14	319 54	71 60	320	2,896	5,490	13	3,911 60	1,091 25
7	Aylmer	114 47	325 00	30 40	85 92	555 79	544 78	11 01	572	4,493	12,064	32	4,000 00	.....
8	Ayr	44 59	150 00	6 35	50 09	251 03	246 01	5 02	315	3,286	5,391	29	1,800 00	3 75
9	Belleville	214 54	1,000 00	.....	330 76	1,545 30	1,522 10	23 20	1,970	6,185	33,797	52	5,200 00	56 00
10	Berlin	250 00	1,968 18	.....	172 88	2,391 06	2,391 06	.....	800	7,918	11,386	72	7,942 84	105 88
11	Bothwell	86 90	125 00	.....	58 06	269 96	215 45	54 51	190	2,408	4,713	.....	1,550 00	.....
12	Bracebridge	160 56	583 86	27 85	190 15	962 42	752 00	210 42	500	3,484	9,751	25	3,900 89	.....
13	Brampton	138 09	550 00	2 00	140 51	830 60	809 24	21 36	459	4,719	13,845	23	3,200 00	.....
14	Brantford	250 00	3,710 00	19 00	656 52	4,635 52	4,635 52	.....	3,508	20,395	94,655	121	572,00 00	244 42
15	Brighton	115 24	195 00	.....	19 26	329 50	272 53	56 97	260	3,241	5,335	23	1,656 97	.....
16	Brockville	250 00	1,200 00	26 50	253 10	1,729 60	1,633 95	95 65	2,863	10,772	42,022	59	22,500 00	81 25
17	Brussels	68 92	168 00	62 25	56 20	355 37	335 88	19 49	242	3,258	3,868	24	2,000 00	.....
18	Burks Falls	107 93	200 00	.....	88 26	396 19	389 01	7 18	374	2,113	4,183	20	1,232 18	.....
19	Caledon	14 67	15 00	.....	111 76	141 43	131 81	9 62	102	3,295	1,784	8	2,719 22	.....
20	Caledonia	76 57	50 00	.....	189 22	315 79	242 60	73 19	265	3,644	5,679	.....	1,775 95	.....
21	Camden East	37 01	90 00	.....	2 90	129 91	129 91	.....	240	1,980	2,039	16	1,101 57	177 79
22	Cardinal	18 08	150 00	1 00	70 61	239 69	192 11	47 58	175	4,881	3,076	26	1,100 00	.....
23	Carleton Place	112 95	250 00	.....	352 82	715 77	458 80	256 97	381	4,440	8,362	21	2,000 00	.....
24	Cayuga	10 16	106 21	7 30	.....	123 67	113 51	10 16	100	1,861	2,060	.....	1,040 00	.....
25	Chatham	180 54	1,220 02	.....	419 50	1,820 06	1,820 06	.....	940	6,713	21,773	39	25,575 02	15 00
26	Chesley	76 28	220 00	3 00	167 75	467 03	361 49	105 54	320	2,064	11,112	21	930 00	.....
27	Chesterville	86 49	100 00	.....	77 68	264 17	264 17	.....	327	1,750	5,916	.....	1,544 39	14 87
28	Clifford	56 10	100 00	16 10	47 21	219 41	219 41	.....	249	3,906	2,281	.....	2,065 02	34 27
29	Clinton	153 86	165 00	.....	459 10	777 96	719 02	58 94	671	5,276	13,169	45	14,078 31	.....
30	Cobden	27 50	50 00	5 10	17 55	100 15	56 31	43 84	105	790	1,122	.....	699 85	23 00
31	Collingwood	96 08	1,450 00	.....	2,155 18	3,701 26	3,629 89	71 37	669	5,432	12,816	45	22,541 93	99 80
32	Cornwall	76 83	500 00	33 00	140 53	750 36	750 36	.....	860	3,717	14,045	44	10,900 00	77 93
33	Creemore	25 05	25 00	.....	6 64	56 69	49 68	7 01	100	1,383	1,370	.....	560 03	.....
34	Deseronto	131 28	600 00	.....	105 31	836 59	776 74	59 85	929	4,670	33,231	44	2,833 91	.....

35 Delhi	35 07	160 00		57 83	252 90	235 42	17 18	252	1,877	3,318	17	450 00		
36 Don	28 50	25 00	5 75	49 78	109 03	100 77	8 26	116	1,187	632		825 16		
37 Drayton	17 63	170 00	5 50	88 00	281 13	247 28	33 85	-	3,108	3,577	15	1,364 00	288 67	
38 Dutton	24 71	200 00	25 03	24	249 98	227 18	22 80	113	1,922	2,383		1,536 09	29 11	
39 Elmira	20 71	231 66		158 10	410 47	394 58	15 89	159	2,421	2,614	18	2,065 00		
40 Erin	25 40	65 00		17 01	107 41	93 96	13 45	150	2,095	3,664		1,514 88		
41 Exeter	68 43	115 00	27 00	48 57	259 00	235 16	23 84	518	4,691	10,220	22	2,565 00		
42 Forest	84 78	250 00		140 56	475 34	407 41	67 93	487	3,906	9,693	18	3,340 00	31 25	
43 Galt	250 00	1,800 00		636 59	2,686 59	2,686 59		1,392	6,398	20,552	65	33,200 00	1,085 74	
44 Garden Island	131 81	250 00	49 10	231 19	662 10	662 10		135	6,111	1,863	34	3,894 26	101 44	
45 Georgetown	75 56	200 00	7 75	147 05	430 36	320 60	109 76	250	3,100	9,352	30	2,225 00		
46 Goderich	106 44	690 00		316 84	1,113 28	938 05	175 23	702	4,327	12,214	48	11,650 00		
47 Grand Valley	46 07	244 65		22 71	313 43	256 00	57 43	218	2,691	3,324	19	1,600 00		
48 Grantham (St. Catharines)	63 46	75 00		66 46	204 92	154 41	50 51	275	2,490	2,635		1,645 00		
49 Gravenhurst		100 00		125 67	225 67	197 16	28 51	437	2,749	6,957		1,251 51	52 50	
50 Grimsby	97 12	335 00		54 23	486 35	464 31	22 04	750	4,862	16,369	30	3,922 04		
51 Guelph	250 00	2,060 00		81 15	2,391 15	2,391 15		1,417	10,102	54,725	54	36,000 00		
52 Hagersville	18 42	121 92	9 40		149 74	136 80	12 94	200	2,111	3,415	14	1,524 00		
53 Hamilton	250 00	14,400 00		1,161 83	15,811 83	15,811 83		15,152	28,469	153,303	165	74,146 00	15,970 00	
54 Harriston	97 50	223 00	5 75	46 86	373 11	326 69	46 42	445	4,685	7,688	27	3,075 00		
55 Hensall		79 89	46 95	40 97	167 81	143 30	24 51	133	1,516	2,962		1,199 36		
56 Hespeler	90 18	290 00		130 86	511 04	424 48	86 56	395	3,631	9,218	29	2,750 00		
57 Ingersoll	115 30	575 00	1 50	98 26	790 06	706 95	83 11	800	4,690	15,726	26	2,300 00	40 00	
58 Iroquois	23 63	150 00		85 74	259 37	220 46	38 91	203	2,060	5,491	23	1,300 00	50 00	
59 Kemptville	67 08	290 00		308 52	665 60	519 87	145 73	382	1,663	7,768	23	1,489 23	116 00	
60 Kincardine	57 24	662 25	4 17	171 36	895 02	850 95	44 07	363	3,546	7,934	48	2,705 00		
61 Kingsville	124 74	300 00		94 96	519 70	421 75	97 95	237	2,147	4,868	28	1,694 95	60 00	
62 Lakefield	54 66	100 00	2 00	25 17	181 83	181 25	58	122	1,394	2,106	20	650 00	7 41	
63 Lanark		100 00		43 94	143 94	50 95	92 99	189	1,726	2,687		1,225 00		
64 Lancaster	151 72	53 96		223 38	429 06	423 79	5 27	240	3,498	2,721	14	5,129 25		
65 Leamington	77 22	300 00		121 14	498 36	489 68	8 68	350	2,193	6,287	23	1,700 00		
66 Lindsay	247 05	1,011 35	19 86	127 38	1,405 64	1,405 64		761	4,809	21,295	55	17,256 02	235 30	
67 Listowel	101 41	500 00	48 35	50 76	700 52	700 52		800	3,462	9,245	14	1,575 00	25 76	
68 Little Current	13 73	50 00		21 45	85 18	75 29	9 89	220	1,559	3,322		805 00		
69 London	250 00	8,777 00		667 18	9,694 18	8,623 22	1,070 96	3,000	18,465	69,670	144	50,659 00	18,027 00	
70 Lucknow	20 98	140 00	29 85	17 10	207 93	175 71	32 22	269	3,084	3,137		1,650 00		
71 Markdale	87 86	120 00		20 00	227 86	225 76	2 10	146	2,960	3,532	18	2,810 00		
72 Marlbank	25 65			72 75	98 40	98 40		230	731	1,041	13	567 66		
73 Matilda (Iroquois)	22 13			50 10	72 23	62 74	9 49	205	445	8,457		307 02		
74 Merrickville		270 00	5 90	452 08	727 98	700 69	27 29	206	3,035	4,508		2,517 08	107 00	
75 Merritton	49 96	125 00		14 74	189 70	137 96	51 74	498	2,086	5,355		1,407 92		
76 Midland	85 56	295 00	3 00	47 27	430 83	418 00	12 83	598	2,982	9,422	26	1,140 00		

* Not reported.

TABLE B.—*Continued.*

Number.	Free Libraries.	Receipts.					Expenditure.	Balance on hand.	Number of members.	Number of volumes in library.	Number of volumes issued.	No. of newspapers and periodicals.	Assets.	Liabilities.
		Legislative grants.	Municipal grants.	Members' fees.	Balances and other sources.	Total receipts.								
		$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.					$ c.	$ c.
77	Millbrook	82 90	175 00	.....	221 85	479 75	303 57	176 18	197	2,088	7,020	29	1,726 18	300 00
78	Milverton	42 52	75 00	11 85	132 18	261 55	240 73	20 82	227	2,416	3,518	.....	1,866 73	.....
79	Mitchell	75 32	335 00	16 60	136 56	563 48	443 02	120 46	238	4,171	9,980	22	5,142 61	.....
80	Newington	.....	.....	.....	67 85	67 85	66 15	1 70	100	854	258	.....	1,893 81	28 17
81	Newmarket	25 00	275 00	5 45	15 15	320 60	306 24	14 36	686	2,372	9,555	20	1,135 00	.....
82	Niagara Falls	188 69	1,050 00	64 65	66 47	1,369 81	1,357 25	12 56	1,297	8,014	26,085	25	7,550 00	.....
83	North Bay	56 47	31 25	.....	115 00	202 72	193 36	9 36	350	2,101	5,499	13	1,600 00	.....
84	Orangeville	109 50	486 95	.....	125 83	722 28	618 59	103 69	435	4,071	7,758	35	3,800 00	75 00
85	Oshawa	113 74	699 65	.....	167 07	980 46	886 46	94 00	1,046	5,359	11,188	39	2,150 00	.....
86	Ottawa	.....	7,500 00	.....	15,000 00	22,500 00	7,796 07	14,703 93	.....	5,742	.....	347	131,732 07	36,000 00
87	Otterville	.....	47 77	.....	41 23	89 00	73 48	15 52	141	866	1,421	.....	535 52	.....
88	Paisley	68 99	170 00	19 80	44 44	303 23	295 39	7 84	242	4,581	4,229	22	2,900 00	.....
89	Paris	38 90	875 08	1 80	195 88	1,111 66	952 61	159 05	658	6,843	10,019	37	14,400 00	68 10
90	Parkhill	5 25	150 00	.....	30 26	185 51	141 30	44 21	392	2,204	2,333	.....	1,280 33	.....
91	Parry Sound	.....	250 00	.....	67 05	317 05	200 49	116 56	191	2,038	3,063	....	1,225 00	21 00
92	Pembroke	202 24	635 10	.....	149 84	987 18	872 44	114 74	640	2,423	7,979	27	1,664 74	38 50
93	Penetanguishene	106 84	333 62	.....	.....	440 46	440 46	.....	386	5,527	8,511	3	3,369 60	.....
94	Picton	154 61	720 22	3 00	205 54	1,083 37	1,025 12	58 25	934	3,570	22,494	38	2,377 71	.....
95	Port Carling	28 46	81 51	12 35	58 77	181 09	179 27	1 82	136	1,494	1,100	14	700 00	.....
96	Port Colborne	51 52	100 00	.....	32 09	183 61	166 69	16 92	323	2,110	5,478	.....	1,477 07	.....
97	Port Rowan	.....	70 00	.....	12 34	82 34	64 57	17 77	365	2,174	2,436	5	1,555 00	361 83
98	Prescott	124 59	250 00	.....	115 50	490 09	487 79	2 30	568	5,519	8,969	31	5,450 00	.....
99	Preston	144 55	300 00	.....	127 86	572 41	493 39	79 02	574	6,647	6,724	24	6,700 00	.....
100	Renfrew	69 72	250 00	2 50	5 87	328 09	288 62	39 47	277	3,817	7,861	.....	3,544 24	60 00
101	Richmond Hill	47 03	100 00	8 00	63 84	218 87	185 36	33 51	107	3,295	2,634	21	1,590 00	.....
102	Ridgeway	50 57	25 00	.....	115 85	191 42	186 05	5 37	130	1,512	2,869	.....	1,136 93	.....
103	Sarnia	250 00	1,991 12	.....	241 04	2,482 16	2,044 07	438 09	1,700	5,514	29,110	61	20,232 52	.....
104	Seaforth	77 77	322 67	9 25	67 58	477 27	474 79	2 48	580	4,781	11,170	17	4,202 48	500 00
105	Shelburne	60 84	200 00	.....	20 50	281 34	261 25	20 09	174	2,510	3,900	20	1,975 00	.....
106	Simcoe	147 24	528 41	.....	586 49	1,262 14	988 25	273 89	626	6,168	13,525	55	7,273 89	.....
107	Smith's Falls	185 06	1,100 00	2 50	131 10	1,418 66	1,418 66	.....	1,032	4,497	17,116	45	16,500 00	289 33
108	Stayner	35 15	75 00	3 50	6 42	120 07	117 11	2 96	218	1,826	3,708	.....	1,275 28	.....
109	Stouffville	98 76	170 00	.....	69 88	338 64	317 97	20 67	449	4,312	7,875	32	4,480 00	.....
110	Stratford	250 00	1,200 00	5 00	699 33	2,154 33	1,799 11	355 22	1,550	7,516	38,185	48	20,800 00	.....

111 Streetsville	64 01	100 00	24 55	64 91	253 47	244 23	9 24	600	2,843	6,500	22	3,000 00	270 00	
112 St. Catharines	250 00	2,500 00	.....	407 86	3,157 86	3,016 42	141 44	3,283	9,398	28,148	65	39,545 91	2,800 00	
113 St. Mary's	90 56	600 00	.....	59 96	750 52	651 68	98 84	460	5,963	12,280	25	2,950 00	.....	
114 St. Thomas	213 71	899 09	.....	573 89	1,686 69	1,421 41	265 28	3,401	9,447	119,471	53	5,748 13	.....	
115 Tara	.....	105 00	12 35	38 30	155 65	133 90	21 75	118	2,028	1,650	9	2,058 50	.....	
116 Thessalon	2 25	185 00	.....	11 56	198 81	197 68	1 13	151	2,162	2,319	22	1,635 32	.....	
117 Thornhill	13 31	30 00	.....	2 98	46 29	27 00	19 29	63	868	718	2	598 87	.....	
118 Thornloe (New Liskeard)	43 83	200 00	9 50	25 38	278 71	257 50	21 21	200	1,131	2,245	7	550 00	.....	
119 Thorold	82 44	300 00	.....	88 58	471 02	449 59	21 43	400	5,402	8,292	20	5,600 00	23 00	
120 Toronto	250 00	36,603 00	.....	2,258 28	39,111 28	39,106 70	4 58	39,430	140,243	235,050	874	281,739 49	49,519 42	
121 Tottenham	.....	.....	.....	18 50	18 50	7 52	10 98	98	2,283	1,641	.....	1,310 00	.....	
122 Uxbridge	111 20	275 00	30 00	255 33	671 53	671 53	.....	650	6,680	9,678	30	9,850 00	105 33	
123 Walkerville	.....	750 00	20 87	1,200 00	1,970 87	1,903 08	67 79	360	1,061	8,166	17	1,196 76	.....	
124 Wallaceburg	107 37	357 67	.....	522 22	987 26	576 05	411 21	434	2,837	8,678	27	2,172 28	.....	
125 Waterford	.....	100 00	13 70	26 55	140 25	128 68	11 57	101	1,482	1,613	.....	950 00	59 37	
126 Waterloo	204 90	802 58	.....	384 11	1,391 59	1,330 91	60 68	350	8,178	9,097	32	8,055 61	.....	
127 Watford	55 55	196 00	70 00	209 57	531 12	525 23	5 89	192	3,098	5,152	21	1,600 00	70 00	
128 Westford	26 92	20 00	.....	9 37	56 29	53 53	2 76	107	1,559	244	.....	1,216 22	.....	
129 White Lake	26 84	.....	.....	15 65	42 49	6 08	36 41	110	827	1,807	.....	300 00	.....	
130 Wiarton	55 05	200 00	.....	45 04	300 09	300 09	.....	385	3,623	3,121	21	2,398 93	.....	
131 Windsor	250 00	3,550 00	.....	270 63	4,070 63	3,686 99	383 64	1,622	13,241	47,749	76	44,522 26	429 50	
132 Wingham	131 40	325 00	64 96	43 55	564 91	537 39	27 52	421	4,064	10,665	40	2,640 00	.....	
133 Woodstock	250 00	1,200 00	.....	213 73	1,663 73	1,624 60	39 13	875	6,847	39,081	44	4,000 00	75 00	
134 Wroxeter	47 34	105 00	6 00	14 00	172 34	171 88	46	150	4,554	2,818	.....	4,344 09	.....	
Total	11,693 24	121,613 64	989 39	40,027 39	174,323 66	151,504 32	22,819 34	124,159	684,539	1,807,122	4,319	1,223,171 89	129,626 19	

Ontario Society of Artists.

During the year six exhibitions were held in the galleries of the Society and five new names were added to the list of members. From designs furnished by the Society a new art gallery has been erected, larger and better than any previously existing in the Province.

The Annual Exhibition of the Society was opened by His Honour W. Mortimer Clark, K.C., Lt.-Governor. There were 151 works shown.

The following pictures were chosen by the Society for the Ontario collection in accordance with the $200 grant from the Ontario Government:

No. 117, "The Passing of an Autumn Day," H. Spiers.

No. 124, "A Quiet Afternoon, Beaupre," Gertrude E. Spurr.

The grant from the Ontario Government of $800 was spent in the purchase of the following pictures selected by the Guild of Civic Art:

"In the Meadow," J. W. Beatty, $175.

"Storm Bound," F. McG. Knowles, $175.

"Reverie," G. A. Reid, $150.

"Evening," Mrs. M. H. Reid, $175.

"Winter Landscape," O. P. Staples, $75.

"Yellow Water Lilies," Miss M. E. Wrinch, $50.

One of the most important events of the year was the opening of the new art gallery in connection with the Canadian National Exhibition. The collection of 278 pictures was of exceptional interest, including the works of many distinguished European painters.

During the year the Society's gallery has been used for several important exhibitions:

The Royal Canadian Gallery of Arts.

Architectural Eighteen Club.

The Light of the World, by Holman Hunt.

Abbey's Coronation Picture. Applied Arts Exhibition.

The Huron Institute, Collingwood.

During the year twelve meetings of the Executive Committee and eight regular meetings of the Institute were held.

The following lectures were delivered:

The Tooth of Time. Professor Coleman.

The Early Indians of this Section. J. Hugh Hammond.

The Forestry Problem. Mr. E. Stewart.

The Fenian Raid. Col. Cruikshank.

The Petun Indians. Major G. W. Bruce.

Owing to the untiring energy of the Curator of the Museum, Mr. C. E. Freer, a large number of new exhibits have been secured.

Hamilton Scientific Association.

The General Association held ten meetings as follows:—

Inaugural Address. Geo. L. Johnson, B.A., President.

Rivers of Canada. Professor Coleman.

Churches of France. Professor Squair.

Immunity. Dr. J. Edgar Davy.

Labrador Eclipse Expedition. Rev. D. B. Marsh, F.R.A.S., and G. P. Jenkins, F.R.A.S.

Archæology and the Origin of the Hebrew People. Rev. Logie, M. C., Donnel, M.A.

Progress of Photography. James Gadsby, P.C.S.

From Prince Albert to Port Churchill. J. W. Tyrrell, C.E.D., L.S.

Vacation Rambles in the Old Land. P. L. Scrivin, T.H.S.A.

During the Session twenty new members were added.

Five Honorary Members have been added, including E. W. Maunder, F.R.A.S., Greenwich Observatory; Mrs. Maunder; Dr. Grenfell, M.R.C.S., Labrador; W. F. King, B.A. LL.D., Ottawa; and Professor Brazier, Alleghany, Pa.

Dr. Fletcher, of Ottawa, was chosen to represent the Association at the meeting of the Royal Society at Ottawa.

The museum has been re-arranged and the seating room much improved.

Ottawa Field Naturalists' Club.

Programme of Winter Soirees, 1905-6.

President's Address and Report.

Address by Dr. J. F. White.

Illustrated Lecture. Apparent Consciousness in Plants and Animals. Dr. S. B. Sinclair.

Illustrated Lecture. The Geology of Strathcona Park and other Ottawa localities. Dr. H. M. Ami.

Report of Geological Branch. W. J. Wilson, Ph.B.

The Migration of Birds. C. W. G. Eifrig. Illustrated by Specimens.

Report on the Ornithological Branch. Mr. A. G. Kingston.

Illustrated Lecture. Trees, Shrubs, and Plants for the adornment of Home. Dr. W. Saunders.

Conversational Evening:—

Prof. J. Macoun. Botany.

Dr. J. Fletcher. Collection of Insects for Schools.

Dr. Otto Klotz. Gravity.

Dr. H. M. Ami. Methods of Work of the Ottawa Field-Naturalists' Club. Illustrated by lantern views.

Fish Culture. Prof. E. E. Prince. Illustrated.

Annual Meeting.

Address by Mr. A Gibson. Method of Studying Insects followed at the Experimental Farm.

The above programme was carried out with some slight changes in dates.

Excursions.

Sub-excursions were held during the Spring and early Summer to localities near Ottawa. General excursions were held to Chelsea and Carp. The Chelsea excursion was attended by members of the Royal Society and also by members of the Carleton County Teachers' Association. Addresses were delivered by Drs. C. F. Hodge, Clark University, Dr. A. H. MacKay, Supt. Education, Nova Scotia, and Dr. G. U. Hay, Editor Educational Review.

The Ottawa Naturalist, the official organ of the Club, has during the year contained 249 pages of letter press and four engravings. This publication deserves the highest commendation and should receive more general support from the public. Some thirty articles on Nature Study have appeared during the past three years and 5,500 copies of each of these papers have been printed in pamphlet form and distributed throughout Canada.

Reports of Branches.

The Entomological, the Geological, the Botanical, the Zoological and Ornithological Branches have done much scientific and practical work during the year.

A Summer School for Teachers was held in Ottawa in July, 1905. Several members of the Club delivered lectures in the Nature Study Course and also aided in the field work.

The Scientific Society of the University of Ottawa.

During the year the following lectures were delivered:—
The Adulteration of Food. Mr. William Cavanagh.
Patent Medicines. Rev. J. A. Lajeunesse.
The Conservation of Energy. Mr. Charles Seguin.
Reflection and Refraction of Light. Mr. William Derham.
(Mr. James George demonstrated the laws explained in this lecture.)
Prehistoric Man. Illustrated. Mr. George O'Toole.
Mr. Thomas Tobin read an interesting paper on Subterranean Caverns.
Laws of the Propagation of Sound. Mr. James George.
Medical and Surgical Emergencies. Dr. D. M. McDougall.
Deep Sea Life. Mr. James McNeill.
Exercise and Training. Mr. Thomas Sloan.
Mr. Thomas Callaghan read an interesting paper on Peat and Peat Formations.
Inventions of the 19th Century. Illustrated. Mr. G. Gormley.

The Ottawa Literary and Scientific Society.

The Society received a donation of $200.00 from Mr. John Manuel, a Life Member. A considerable portion of the gift has been expended upon the library. The report of the librarian shows that 233 volumes were placed on the shelves, of which 190 volumes were additions to the catalogue. The percentage of fiction taken from the library shows a slight decrease.

The following lectures were delivered:—
Tolestoy and His Message. E. H. Crosby.
Before Port Arthur. W. Richmond Smith.
Jerusalem, Illustrated. J. S. Ewart, K.C.
The Canadian Militia under the French Regime. Benjamin Sulte, F.R.S.C.
The Genius of English, Irish, Scottish and Welsh Song. Prof. E. E. Prince, F.R.S.C., (with musical illustrations).
Place of Defence in Canadian National Life. C. F. Hamilton, M.A.
Scandinavia Revisited. Thos. Macfarcane, F.R.S.C., (musical illustrations).
The Southern Trail in British Columbia. J. M. Macoun.

L'Institut Canadien Francais d'Ottawa.

During the year the following public lectures were given:
French-Canadian Institutions. Dr. J. K. Foran.
Hygiene of the Mouth. Dr. R. Chevier.
Origin of names of Canadian Families. Rev. P. Lejune, O.M.I.
Geology of Ottawa and Surroundings. Dr. Ami.

The North West and its Resources. Mr. Cyr, M.P.
French Castles and their legends. Mr. N. Champagne.
Experiences of a Trip around the World. Mr. Chanoyne.
The Law applied to Domestic Relations. J. M. McDougall, K.C.
The Influence of Education. Rev. Abbe Corbeil.
The Yukon, its wonders and resources. A. T. Genest, C.E.

In addition to the lectures a series of Scientific Courses was inaugurated at which the attendance exceeded the most sanguine expectations.

A large number of books destroyed by fire some time ago have been replaced.

St. Patrick's Literary and Scientific Association.

During the season the following addresses were delivered:—
A Tour through England, Ireland and Scotland. Dr. J. R. O'Brien.
O'Connell and his Times. Rev. Father Harty.
The Arctic Regions. Captain Bernier.
The Irish Race and Education. Dr. Fallon.
The Study of Languages. Rev. Dr. O'Boyle.
Address. Hon. Dr. Charles Fitzpatrick.
During the year 455 volumes were taken from the library.

Canadian Institute.

The librarian reports that the Institute has received during the year 80 donations, and the number of exchanges and volumes loaned is 886. The number of scientific and learned societies with which the Institute exchanges publications is 554. From these have been received 2,443 publications.

The Natural History Section reports that five meetings were held.
The following papers and addresses were given:—
Heredity. Prof. Ramsay Wright.
Micro-organisms in Milk. Dr. A. R. Abbott.
A Talk on Carnations. Mr. J. H. Dunlop.
Individuality of Trees. (Illustrated.) Mr. J. McPherson Ross.

General Report.

At the meetings held on Saturday evenings the following papers were read:—
Lessons in Empire Building. Mr. R. E. Kingsford.
Tropical Seas and African Ports. Prof. A. P. Coleman.
The Supposed Masonic Stone from Annapolis. Mr. John Ross Robertson.
Demonstrations of Electro-Chemical Apparatus. Professors W. H. Ellis and T. R. Roseburgh.
Physical and Chemical Character of Colloids. Prof. McCallum.
A Winter in Athens. W. A. Kirkwood, B.A.
Heat Engines. Prof. Angus.
St. Colomba. By the President.
The Microscopic Structures of Iron and Steel. Prof. J. Galbraith.
Meteorological Conditions of the Past Winter. Mr. R. F. Stupart.
Is Belief in a Glacial Period justified? H. De Q. Sewell, Esq.
The San Francisco Earthquake and the Seismograph. Mr. R. F. Stupart.

The Beginnings of Imperialism. Prof. McCurdy.
Microscopical Demonstrations of the changes of Colloids. Prof. Macallum.

Royal Astronomical Society of Canada.

During the year twenty regular meetings were held.
The following papers were presented:—
The Astronomy of Tennyson. Mr. John A. Paterson.
Personal Profit from Astronomical Studies. Rev. Robert Atkinson.
Lunar Photography. Rev. Dr. Marsh.
Trans-Pacific Longitude Determinations. By Dr. O. J. Klotz and Mr. F. W. O. Werry, was given by the former.
Visit to the South Sea Islands. Dr. Klotz.
Some Achievements of 19th Century Astronomy. Mr. L. H. Graham.
Causes of Weather Changes. Director Stupart.
Variable Stars. Mr. J. Miller Barr.
Binary Stars. Mr. A. F. Miller.
Stellar Classification. Mr. W. B. Musson.
Stellar Legends of the North American Indians. Mr. J. C. Hamilton.
Shape of the Earth. Mr. J. R. Collins and Professor Coleman.
The Harvest Moon. Mr. J. E. Maybee.
Alfred Russell Wallace, as to "Life in other Worlds." Professor Kirschmann.
The total eclipse of Aug. 30th was the subject for discussion for three evenings.
There were two open-air meetings with telescopes.
In addition to the regular meetings the Society gave a series of eight public lectures. They were held in the Chemical Building and were by Professor De Lury.

The Society of Chemical Industry.

The following papers were read:—

1905.

Crystallization. Prof. J. H. Bowman.
Chemical Industry in British Columbia. Prof. W. R. Lang.
The Metric System. Mr. Dale.

1906.

Mineral Deposits at Cobalt. W. G. Miller, B.A., M.A., Sc.
Chemical Patents. Mr. J. E. Maybee.
A Talk on Foundry Chemistry. H. L. Bowers, B.S.
Recent Investigations of Breakfast Foods. R. Harcourt, B.S.A.
A Recording Calorimeter for Gas. J. W. Bain, B.A.Sc., and Mr. J. W. Batten.

Wellington Field Naturalists' Club.

During the year meetings were held every two weeks from Oct. 11th to April 11th. On an average two papers were presented at each meeting. Among the most valuable papers were:—

Leaf Colouration in Relation to Leaf-fall. Mr. E. Thompson.
Botanical Trip through Bruce Peninsula. Mr. A. B. Klough.
Some Insects of the Vicinity of Guelph. Mr. T. J. Moore.
The Raccoon. Mr. V. W. Jackson.
Some Common Sedges. Mr. A. B. Klough.
The Genus Etheostoma in the River Speed. Mr. J. L. Beattie.
Forestry Conditions in the North West. Mr. R. H. MacMillan.
Aquaria. Mr. H. Hutt.
Gall Insects. Mr. T. D. Jarvis.
Some weaknesses in the Mutation Theory. Mr. A. B. Klough.
Methods in Bacteriological Research. Mr. B. Barlow.

In field work the migration of birds has been recorded and two species of birds added to the County list.

The northern portion of the County has been explored botanically.

The second number of the Ontario Natural Science Bulletin is in press.

Copies of Bulletin No. 1 have been sent gratis to all Public Libraries making application for the same.

Ontario Historical Society.

The last annual meeting of the Ontario Historical Society was held in Collingwood, when the report of the Secretary showed a membership of 223 elected, ex-officio 17, corresponding 7, honorary 7.

The following local societies are affiliated:—York Pioneer and Historical Society, Lundy's Lane Historical Society, Thorold and Beaverdams Historical Society, Niagara-on-the-Lake Historical Society, Women's Canadian Historical Society of Toronto, Elgin Historical Society and Scientific Institute, Wentworth Historical Society, Women's Wentworth Historical Society, Norfolk Historical Society, London and Middlesex Historical Society, Lambton Historical Society, Belleville and Bay of Quinte Historical Society, Peterborough Historical Society, Victoria Historical Society; Ottawa Women's Canadian Historical Society, Bowmanville Women's Historical Society, United Empire Loyalists Association of Ontario (Head of the Lake Branch), Huron Institute, Cobourg and County of Northumberland Historical Society, Essex County Historical Society, Peel County Historical Society, Bruce County Historical Society, York Pioneer and Historical Society, Women's Elgin Auxiliary Historical Society.

During the annual meeting the following papers were read:

Downfall of the Hurons. C. C. James, M.A.
The Petun Indians. Major Bruce.
The Nottawasaga Trail. G. K. Mills, B.A.

Christian Island was visited by the members of the society and an address delivered by J. Birnie, K.C., entitled "The Last Stand of the Hurons."

The Women's Canadian Historical Society.

The membership now numbers nearly three hundred.

The following papers were read:

Canadian Magazines. Mrs. J. W. F. Harrison.

A Colony of Emigres in Upper Canada, by Miss Textor, of Yale University, read by Miss H. M. Hill.

Reminiscences of Early Elections in Toronto. Miss Teefy.

Extracts from a Toronto directory, 1834, with comments by the Secretary.

The following series of papers on Newfoundland were also read:

Discovery and Early History. Miss Sara Mickle.

Occupation and Influence of the French Settlers. Miss M. A. Fitz-Gibbon, the paper supplemented by Miss Mickle.

The History of St. John's, and the Climate and Resources of Newfoundland. Miss C. Tocque.

At the October meeting Mr. Hampden Burnham read a paper on Indian Women and their History.

During the year the Society printed Transaction No. 5. It was composed of the following numbers:

(I) Extracts from the Jarvis papers.

1. Details of the capture of York.
2. Account of the meeting of the Magistrates following the capture.
3. General order.
4. Account of Council held at Kingston.
5. Letters, William Jarvis, etc.

(II.) Plattsburg (1814), from the Diary of J. H. Wood.

(III.) Extracts from papers of Captain H. Pringle.

(IV.) Order concerning the presentation of King's Colors (1822).

(V.) Papers concerning Rupert George, Captain of H.M.S. *Hussar*, 1794.

(VI.) Some U.E.L. Epitaphs. Sara Mickle.

Several valuable donations were received.

Niagara Historical Society.

The Society reports eighteen new members for the year.

Pamphlet number fourteen was published, being extracts from the Powell letters in the possession of Dr. James Bain, in the Public Library, Toronto.

Over seven hundred copies of the publications issued by the Society were distributed to members and others.

The President is preparing a catalogue fully classified.

Plans are being formulated for the opening of the new building in process of erection. The date has been fixed for the Spring of 1907, after the opening of navigation.

Six regular, one special and three Committee meetings were held during the year.

Three papers were read by the President: "Extract from the Powell letters, 1807-1821," "The origin of the Maple Leaf as the Emblem of Canada," "Sir Isaac Brock."

The Memorial Hall promises to become the Mecca for Canadian historical students. The total amount subscribed was $3,580, of which $3,500 have been paid. The tender for the erection of the Hall accepted was $4,100. The deficit has practically been met by Mr. Hugh J. Chisholm, of New York, an old Niagara boy, who generously sent his check for $500.

The Essex Historical Society.

Papers were read by the Rev. Thomas Nattress and P. E. Panet.

Mr. Solomon White read an interesting paper on Indian Treaties.

Under the direction of the Executive the grave of Dr. Hume, one of the martyrs of the invasion of Windsor in 1838, was put in good condition the masonry rebuilt and the lettering re-cut.

Arrangements have been made for the publication of the records of the parish of Assumption, Sandwich, for the first twenty-five years of its existence, from 1767 to 1786. These records will appear in the annual volume of the Ontario Society. The records of the first fifty years of St. John's Church, Sandwich, will also appear in the same publication.

London and Middlesex Historical Society.

Ten regular monthly meetings were held.

Three prizes for the best essays relating to the history of any township in the county were awarded.

A committee has been appointed to select places for placing tablets of historic interest.

The following papers were read:

Prize essay, Township of Biddulph, by Mr. Revington.

Origin of the names of the streets of London. Miss Priddis.

Canadian Autonomy. Alex. Stuart, K.C.

Points of interest visited in Great Britain with Canadian Manufacturers' Society. F. Lawson.

Collection of Indian trophies found on the farm of Mr. Shaw-Wood. Dr. Wolverton.

Illustrated description of Canadian Rockies. Frank Leonard.

What became of the Indian Tribes of Western Ontario. Mr. Dearness.

The following addresses were delivered:

Interesting Features of Australia. Mr. Larke, Canadian Commissioner to Australia.

History of Union Jack and Canadian Coat of Arms. Mr. Casselman.

Cobalt, illustrated. Mr. Parkinson.

Lundy's Lane Historical Society.

During the past twenty years this society has done valuable pioneer work through its historical publications. Including the many leaflets which have been printed from time to time, the total number of pages of strictly historical matter already published already exceeds four thousand. Col. Cruikshank reports that the material for Part VIII. of Documentary History is ready for the printer. It covers the closing months of 1813, and will conclude this comprehensive and valuable work.

During the past year the Society issued an important work, "The Siege of Fort Erie," consisting of 52 pages, and covering the very important events relating to the struggle for the mastery of the last position held by the American forces in Canada, and immediately preceding the close of the war of 1812.

The Executive has under consideration the publication of a folder showing the location, means of access, and story of each battlefield on the Niagara frontier.

A large class of the Macdonald Institute's Department of Nature Study, under Professor McCready of the Ontario Agricultural College, Guelph, visited Lundy's Lane, June 21st, where they were received by two members of the Society and given a description of the battle.

The Society entertained the Ontario Historical Society at its last annual meeting, which was held jointly at Niagara Falls and Niagara-on-the-Lake. The battlefields of Chippawa and Lundy's Lane were visited. A public meeting was held in the evening in the Town Hall and was largely attended.

The Wentworth Historical Society.

By resolution the Provincial Government was asked to erect a monument to Lieut.-Col. the Hon. John McDonell, Attorney-General of the Province and aide to Gen. Sir Isaac Brock; also a monument to the Indian Chief Tecumseh.

The attention of the Society was called to the proposal of citizens of the U. S. to raise the gunboats sunk in the Thames river near Chatham and remove them to Detroit. The proper authorities were petitioned to prevent interference with the boats.

An interesting address was delivered by Mr. Alex. Fraser, Ontario Provincial Archivist, in regard to the evidence given before the U. E. L. Claims Commission.

A lecture was given by Mr. Edward Harris on The Early Women of the Country.

There were two meetings of the Executive and three general meetings of the Society during the year.

Women's Wentworth Historical Society.

A grant of $100 was received by the Society from the Provincial Government.

The one hundredth anniversary of the victory of Trafalgar and the death of Nelson was celebrated by a meeting held in the Armory, in which the pupils of the Public and Separate Schools joined, rendering a patriotic chorus. Appropriate addresses were delivered by the Hon. J. P. Whitney, Premier, and the Hon. J. W. St. John.

LIBRARY CONDITIONS.

During the past year library conditions in the Province show a steady improvement. The conditions have been very favorable, arising principally from the erection and equipment of the libraries which have received gifts from Mr. Andrew Carnegie. These libraries are placed on a permanent basis, they are able in many instances to secure the services of trained librarians who have inaugurated modern methods of classification and numerous other improvements fruitful in good results. The friends of library progress upon the library boards and scattered through each community have taken heart, while the Ontario Library Association has exerted a powerful influence for progress. The combined result is shown in the education of the people, in the growing conviction that a Public Library is an esential part of the educational system, that its maintenance is as necessary as is the maintenance of a public school. Once public sentiment upon this subject is aroused and educated through the press, from the platform and by individual appeals the result no longer can remain in doubt.

Ontario Library Association.

The sixth annual meeting of the Ontario Library Association was held in Toronto, April 16th and 17th, 1906. The meeting was the most successful in the history of the Association and was attended by a large number of representatives from the Public Libraries throughout the Province. The story of the library buildings of Ontario, illustrated by nearly 100 lantern slides, was the strong feature of the meeting. The addresses and papers

were clear, practical and thoughtful. As the object of the Association is to promote the welfare of libraries, by stimulating public interest, in founding and improving them, I recommend that financial assistance be given the Association to enable it to hold at least one special meeting during the year 1907, to which all librarians, trustees, directors and persons interested in library work should be invited and admitted without charge. A programme of practical work, under the direction of capable officers of the Association, would yield excellent results.

General Classification, etc.

The system of classification for public libraries is left to the direction of the respective library boards. Generally speaking, the classification adopted by the larger libraries is the Dewey or Cutter Systems, with modifications to suit local conditions. During the present year the Guelph Public Library has (under the direction of Mr. Tytler, the chairman of the purchasing committee), re-classified the fiction in accordance with the Cutter system. I understand that the Dewey system will be used for the other divisions of the library, and that the re-classification of the fiction has met with general approval. For all libraries a copy of the American Library Association catalogue is indispensable as a guide in selecting books, as the list includes 7,520 volumes specially adapted to small libraries and those just starting.

Publisher's Classification.

Under the present system of classification practiced by dealers in making their invoices, History includes Historical Romances; General Literature includes Moral Tales, Romances and Juvenile Literature; Miscellaneous includes Short Stories and Fairy Tales.

The Act provides that only 20 per cent. of the Government grant for books will be allowed for the expenditure on fiction. I find that the publishers and wholesale dealers invoice all classes of fiction as History, General Literature and Miscellaneous. The evil thus created is twofold:

(*a*) If the books are catalogued in accordance with the invoices the fiction is scattered through the library, covering at least four sections, thus increasing the labors of the librarian and confusing the patrons.

(*b*) The system is essentially misleading and dishonest.

A careful examination of the Public Libraries shows that the percentage of fiction purchased and upon which grants are paid varies from 40 per cent. to 75 per cent. I therefore respectfully recommend that the present system of classification be abolished; that novels of all classes be classified as fiction and that the Regulation governing the grant for fiction be amended to read 45 per cent. instead of 20 per cent., with the proviso that the Minister of Education be empowered to reduce the percentage at his discretion by giving library boards notice of the proposed change. I am convinced that an honest classification will reduce the percentage of fiction purchased for Public Libraries, particularly in the smaller libraries. The standard for classification should (as far as possible) be the Library of Congress American Library Association Catalogue.

Invoices, Vouchers, etc.

Owing to the discovery of certain irregularities in the payment of Government grants, the Minister of Education notified the library board of each Public Library as follows:

"On and after January 1st, 1906, the Department of Education will require all Public Libraries hereafter desiring to qualify for Legislative grants to procure at the time of making purchase of books, newspapers, magazines and periodicals, receipted detailed accounts made out in duplicate. One copy of such receipted invoice is to be forwarded with the annual report to the Education Department and the other kept on file by the treasurer. The two files of receipted accounts and the annual report will then have to correspond at the end of the year."

Under this regulation the invoices and vouchers upon which all Legislative grants are made and paid will be retained by the Education Department. This system will furnish a complete check and prevent irregularities arising from demands for grants which have already been paid.

Sale of Public Libraries.

During the present year several small Public Libaries have been seized and sold for debts contracted. Under the regulations this Department is powerless, unless an annual report has *not* been submitted for the past two years. In all cases to which my attention has been called the seizure or sale had been completed before notice was received by this Department. In some instances libraries containing over 1,000 books, in an excellent state of preservation, were actually sold for less than $50. The records show that in every such case the Government grant to said libraries had exceeded 50 per cent. of the actual cost of the books. To prevent a repetition of the waste of public money in the future, I recommend that the Act and regulations respecting Public Libraries be amended, said amendment to give the Minister of Education or the Education Department a first lien upon the books contained in every Public Library for the full amount of the Government grants paid to each library during the preceding six years, dating from the commencement of any action for the recovery of a debt against a Public Library. Such an amendment would stamp out the present evil and enable this department to take over the books of a defunct Public Library for the public benefit and use.

The Building of New Libraries.

During the past few years the generous gifts of Mr. Andrew Carnegie have wrought important changes in the building of and equipment of Public Libraries in several of the cities and important towns of the Province. To furnish reliable information in the matter of library architecture the Department has secured from the Ontario Library Association a complete set of lantern slides showing the Carnegie Public Libraries of the Province (including floor plans and other details), as well as views of several Carnegie Libraries in other Provinces and some Public Libraries in England. I shall be pleased to visit any locality and exhibit the slides for the definite information of library boards.

WHY DO WE NEED A PUBLIC LIBRARY?

How to start a Public Library.

The History of a Village Library.

Educationists in Ontario now recognize the necessity which exists for strengthening school and public libraries, making them an essential part

of our educational system. To stimulate public interest in establishing and improving public libraries and to aid in securing financial assistance from wealthy citizens and cordial co-operation among taxpayers, greater publicity should be sought. To this end I have secured copies of the following pamphlets: "A Village Library," by Mary A. Tarbell, Librarian of the Brimfield Public Library; "Why do we need a Public Library," compiled by a Committee of the American Library Association; "How to start a Public Library." These pamphlets will be mailed free, upon application, and will be found helpful not only to beginners, but also to those having only local experience.

Book Lists.

Committees of the Ontario Library Association have, during the year, prepared two valuable catalogues.

(*a*) "A selected list of books published during the year 1905, which are recommended by the Ontario Library Association for purchase by the public libraries of this Province. The books selected have been chosen to meet, as far as possible, the wants of the libraries for new books at a moderate price."

(*b*) "Catalogue of children's books, alphabetically arranged by authors, giving title, publisher and price, compiled by Norman Gurd, B.C.L., President Ontario Library Association, C. A. Rowe, Brockville Public Library, and Effie A. Schmitt, Berlin Public Library.

These catalogues were published for the Ontario Library Association by the department and copies mailed to each Public Library in the Province.

Hints on Book Purchasing for Small Libraries.

The smaller library, having the most limited funds, must exercise the greatest care in selection.

The books should be purchased in small quantities, at short intervals. This can be done by procuring catalogues which furnish an excellent outline of the scope and contents of each book. Secure the A. L. A. Catalogue; 6,000 volumes for a popular library, with notes.

Frequent selections enable the librarian to announce through the columns of the local press, by means of notices posted in the library or by placing the latest books on a special table, that new books are being constantly added to the library, thus creating a lively interest among all classes of readers.

As the library is a public institution it should be the aim of the library board to satisfy the demands of the community in which it is situated by catering, as far as possible, to the various tastes of readers. If, for instance, a factory or factories are located in the town be sure and secure some books treating of the industry or industries. Do not buy a subscription book. The agent who sells the book receives from 30 to 50 per cent. commission.

In purchasing novels the safe rule is to choose those which are published by well known firms, and don't buy one because you see it extensively advertised.

Don't buy American net books when you can avoid it. Buy the English editions, they are nearly always cheaper. Probably one-half of the American net books of 1904 were published cheaper in England in 1903. Every library should be constantly making collections of magazine literature for reference work. By this means invaluable material may be acquired. The better class of magazines contain the best fiction, the best poetry, the best essays during recent years.

Don't buy expensive books of reference and thus cripple the library for months for the benefit of a limited number of readers.

Avoid red tape and rigid regulations which impede library development.

Ninety per cent. of the borrowers of books from public libraries completed their education at the public school. The mission of the public library is to reach and help these people.

The poorest quality of binders' cloth will outlast the larger portion of leather used in bookbinding. Only the most expensive morocco is fit for bookbinding.

Model Public School Libraries for the Normal Schools.

Acting upon instructions received from the Hon. the Minister of Education, I prepared a Model Public School Library for the Normal Schools at Toronto, Ottawa and London. The libraries were put up in cheap folding cases; the cost of each library being $25.00, and the number of books averaged about 50. These libraries were prepared as object lessons for the students, showing the variety of subjects and extent of a Public School Library which could be purchased for $25.00.

Restrictions, Age Limit, etc.

I find great diversity among the Public Libraries of the Province relative to restrictions, the age limit, etc. It is noticeable that libraries in which the greatest liberty is given are the most successful and prosperous. The circulation, in proportion to the number of books, is larger, while the percentage of fiction circulated is less. Rules and regulations are necessary, but in many instances the methods in force are obsolete and should be abolished. A Public Library should be as free and convenient to the people as possible. Mr. Utley, librarian of the Detroit Public Library, states the question as follows:—

"The restrictions should be as few as is consistent with the proper conservation of the property and the enforcement of equal and exact justice to all, certainly the spirit of any regulations should be a cordial invitation to the people to make the freest use of their own and a pledge of fairness to all and special favours to none."

Every hinderance tends to hamper the influence of a library; the library is maintained and the books purchased with money obtained from the public purse.

To accomplish the best results our Public Libraries should be made free; the public should be admitted to the shelves and the age limit abolished. Why should a child of twelve be refused a book while one of fourteen is deemed eligible? The time has arrived when Ontario library boards should acknowledge by and through their regulations that children can only be made readers, students and reasoners through the medium of books. The younger the child when he begins to read books the more universal will be the intelligence and culture.

The Story Hour for Children.

Up to the present time I have but one report showing that the story hour has been adopted in a Public Library in the Province; many of our libraries can reasonably be expected, in the near future, to institute a story hour for

miscellaneous stories. The experience of the Carnegie Library of Pittsburg and of many small libraries in Wisconsin and in the New England States has long since demonstrated the value of story telling. It stimulates the imagination of children, cultivates a taste for good literature and leads them to the best books. Many of the principals of our high and public schools would generously assist in telling stories if invited by the librarian and the board of management.

The main object of the story hour is to draw attention to books and to books only. The school room atmosphere should be carefully avoided. The motto should be good to all children and "the right book to the right child at the right time."

Story Telling to Children.

Story telling to children has for the past few years been utilized in Public Libraries in the United States as a means for drawing children to better reading. The story hour for older children has also become an important factor in instructing and amusing. In many libraries a definite programme of stories has been prepared and carried out. When the stories are grouped about one subject for the purpose of making the children familiar with romantic forms of literature and to arouse their interest in real literature the result has been highly encouraging.

As many of our librarians are gifted with humor, pathos and imaginative qualities, the essentials to good story telling, I trust that the coming year will see the practice established in Ontario.

Extract from letter received from Norman Gurd, B.C.L., Sarnia, President of the Ontario Library Association:

"It is most gratifying to have your approval of the work we are doing in the Sarnia library for children. There is no more promising field of work for the libraries of Ontario, and there is none more neglected. Our Board, about two years ago, began to realize that the library was not doing what it might do for children. We then began to study the problem. At that time we found that practically all the books in the juvenile department were story books. We obtained lists of suitable books for children from different sources, embracing books in all the departments of literature, and ordered books from these lists. At first the children were slow in taking out these books, but the better literature steadily gained in popularity. We appointed our assistant librarian children's librarian. She would have her regular duties as assistant librarian, but we thought that if she were given full charge of the children's department, she would be ambitious to make it a success, and to obtain credit for the work done from the Board. This, we found, was a correct surmise.

"Miss Spereman, the assistant librarian, began to make a study of the needs of the children. We provided books and pamphlets on children's work for her to read, and she also visited the children's department in the Port Huron Library, which is a large library administered according to modern ideas, and got many valuable hints. We found that she identified herself with the children, and was able quietly to influence their reading for good. The next step we took was to place the children's books in the children's room entirely separate from the adults' library, thus virtually constituting two libraries under the same rule. The children's library is divided into the same classes as the adults and covers the same ground, though, of course, we have not so many books.

"We had, prior to this, subscribed for children's magazines and periodicals and placed them on the magazine rack in their room. We had also fitted up the room with tables and chairs of different sizes to accommodate children of all ages. We bought colored nature study charts and exhibited them in the children's room. We also hung good productions of well-known pictures on the walls. The children were made monitors of their own room, and instructed to keep it tidy. This plan is working well. The children at first scattered the magazines about the room, and left books piled up on the tables, and the books were very much misplaced on the shelves. They feel now that the care of the room is left open to them and take a personal interest in it, and we feel it tends to make them feel at home in the library.

"The children's story hour is a very recent development, and is the most forward step we have taken. The story hour to-day on "Child Life in Russia" was attended by eighty-four children, and at the conclusion of the talk the children took practically all the books on Russia we had in the library. The children attending range in age from the children in the kindergarten to those of sixteen and seventeen. The story hour also gives the librarian an opportunity to speak to the children about the care of the books, behaviour while in the library, and also keeps her in friendly touch with the children. They are asked for suggestions as to the subjects for future story hours. These talks are very informal, and the children appear to be perfectly at home and ask questions quite freely. The blackboard is used for lists of books touching on the subject under discussion. Illustrated books bearing on the subject are brought down to the auditorium and shown to the children.

"We think that the inauguration of this step in the children's work has commended itself to the people of the town, since we have had numbers of the people speak most favorably of the movement.

"Along this line we have arranged for a science master at the Collegiate to deliver a series of lectures on nature study, illustrated by magic lantern slides. This will probably attract the older children, though, of course, all will be welcome.

"The Sarnia library has, I think, amongst Ontario Libraries, the reputation of being rather too much given to experiment and too venturesome. Our adoption of free access was thought to be a very dangerous move, and our ceasing to require guarantors for all those desiring membership in the library is considered to involve almost certain loss to the library. We have, too, abolished all fees, and the library is truly a free library. I do not know of a library where they do not charge a fee for cards except ours."

Exhibits of Library Plans.

This department is desirous of securing a collection of exhibits of library plans, appliances, systems, etc. This can only be accomplished by the help of librarians in all parts of the Province, who are asked to forward everything bearing on the administrative work of the library under his or her charge; any special feature peculiar to a library will be considered of the greatest value. A copy of the last annual report should be sent. If this request is complied with but a short time will elapse before a valuable collection will be secured. Photographs, architectural plans and descriptions of mechanical devices which have been found to yield good results will be carefully preserved and reproduced for the benefit of other libraries. The co-operation of architects who have designed Public Libraries should be sought in this work by local boards and librarians.

Children's Model Libraries.

One of the principal defects in the Public Libraries is the absence of books suitable for children. When asked for a reason why the child has been neglected the answer is generally, "the Sunday school is supposed to provide for the children." I am strongly of the opinion that we shall not be able to create the reading habit until we have made a special feature of children's books in every Public Library; many of the books relating to child study will be found quite as valuable to mothers as to teachers. The child should not only be permitted to visit the library but should be encouraged to do so; once the path is opened for them they will follow it. There should be little books for little hands with plenty of pictures. The age limit should be abolished root and branch. As object lessons several model libraries for children, including pictures, should be prepared by this department and loaned for a few weeks to libraries.

Public Reference Library, Toronto.

The corner stone of the Public Reference Library Building for Toronto was laid by the Honourable Chief Justice Falconbridge on Tuesday, the 27th of November of this year. The opening of this library will mark an important epoch in the history of the Public Library movement in the Province. Such a library will be of the greatest value not only to the citizens of Toronto, but also to all parts of Ontario. The thousands of students who are annually in attendance at the Provincial University and its affiliated colleges will find the library invaluable. Under the charge of Dr. Bain, the chief librarian, the reference library should soon rank among the most useful libraries on this continent.

Historical Societies.

The Ontario Historical Society continues to do a good work, while exercising a wholesome influence by fostering the establishment of local societies, with which it is generally affiliated. These local societies are frequently the means through which written and printed material of the greatest value is collected and preserved. The study of Canadian history and literature is thus encouraged by the preservation of historical landmarks.

While some of the local societies are doing excellent work in collecting and publishing, an examination of the several reports for the current year leads to the conclusion that it would be advisable to make the government grant conditional; making the minimum basis a certain number of members, a specific number of meetings and the publication of at least one valuable pamphlet per annum.

Travelling Libraries.

One of the greatest obstacles hindering the growth of Public Libraries in small communities is the difficulty experienced in securing sufficient funds for the purchase of new books. The government grant, being based upon the amount expended annually for books, is necessarily small, consequently demands are constantly made for a larger grant. A very large increase would be necessary to effect any substantial improvement among the small libraries, as the major portion of the grant would be absorbed by the larger libraries. A systematic and continued effort should be made to give access to collections of good books by farmers and the residents of small villages.

To accomplish such a desirable result, I recommend the development of and increase in the number of Travelling Libraries. Heretofore the Travelling Libraries of the Province have practically been confined to the lumber camps of New Ontario. The camps are only operated on an average of six months in the year, consequently during the balance of the time the books are idle. In view of the fact that struggling libraries in the older portion of the Province would gladly circulate the books at any time it is evident that a change should be made under which the Travelling Libraries will be kept constantly in use.

The failure of small libraries (several of which have been closed during the past year for lack of funds) can be easily traced to the following causes:—

(1) The purchase of books not suited to the class of readers. These are usually valuable books, including many costly historical works, which the community declare "uninteresting."

(2) Infrequent supplies of new books.

I have not found a small library languishing when new and suitable volumes have been supplied. With fresh books a country library remains as vigorous as a city library.

To inaugurate a new system of library extension, simple, practical and economical, it is necessary to extend the Travelling Library. Each library should consist of about fifty books, to be sent out in a convenient case. The outfit should contain a small register and a type-written catalogue. Said libraries should be loaned to the small or struggling Public Libraries for three months. By establishing circuits of from ten to twelve libraries in a county or group of counties the cost of changing the libraries would be reduced to the minimum and the duplication of books guarded against. A few of the libraries should be made up to suit the needs of special organizations, clubs or localities. Under such a plan these libraries would be used in four different places during the year, and it is safe to say that the circulation of the books by this means would be quadrupled. The local library would pay transportation charges and for any volumes lost or damaged beyond ordinary wear.

A few Travelling Libraries have been prepared and sent out as indicated. The system will be rapidly extended in 1907.

Carnegie Public Libraries in Ontario.

The establishment of Carnegie Public Libraries in some of the cities and towns of the Province has proved not only beneficial to the localities in which they have been opened, but their influence is felt in other centres of population and in rural libraries of the smallest class.

In more than one locality the Carnegie Public Library is gradually becoming the natural local centre of the community. Citizens are proud of the building and its surroundings. They know that the days of doubt have passed; financially it is on a firm foundation. It rapidly makes for itself a place in the affections of the community and becomes the centre of various local interests; as the fountain of intellectual life and the agent of common culture it fills many wants felt by old and young, gradually its power for good is recognized and citizens willingly co-operate in its improvement. The personality of the librarian becomes an effective influence in the community. He ceases to be considered a watchdog to keep the people away from the books that they may be as little worn as possible, and his advice is more and more sought by the inexperienced.

The problem of the hour is to carry on the education after the elementary steps have been taken in the free public schools. An education system which contents itself with abandoning the child who has left the school is, as Huxley tersely said, as inconsistent and absurd as to teach our children the expert use of the knife, fork and spoon, and then provide them with no food.

Carnegie Gifts for 1906.

The following are the gifts made by Mr. Carnegie in 1906 for Public Libraries in Ontario: Dresden, $8,000; Milton, $5,000; Perth, $10,000; Picton, $12,000; Bracebridge, $10,000; Gravenhurst, $7,000; Oshawa, $12,000; Wallaceburg, $11,500; Kincardine, $5,000; Kemptville, $3,000; Hanover, $10,000; Orangeville (additional), $2,500.

Preparing Books for the Shelves.

In many of the smaller libraries I find that the books are disfigured in preparing them for the shelves. A black japan can be purchased with which a background is first made. When the japan is dry the lettering and numbering can be completed with artist's white paint. This system produces uniformity in appearance and is reported by librarians to wear exceedingly well.

Repairing Books.

Owing to the low price at which books are now sold the binding is frail and frequently defective. In many small libraries no attempt is made to repair the books, consequently they soon become ragged in appearance and the life of the book is comparatively short. This department has secured samples of adhesive paper and cloth with which the librarian is able to make necessary repairs in the first stages, thus improving the general appearance of the library and doubling the working life of many books. Samples of adhesive paper and cloth will be sent to library boards on application, with the names of dealers and prices.

Assistance.

During the year I have received many valuable hints and suggestions, with practical assistance, from the executive officers of the Ontario Library Association. The President, Mr. Norman Gurd, the Secretary, Mr. E. A. Hardy, and Dr. James Bain, Toronto Public Library, have been constant in their desire to improve the library system of the Province. The Minister of Education fully appreciates their efforts and recognizes the benefits which must follow from a system of consultation between the Association and the Department. Several important problems have been submitted for consideration at the next annual meeting of the Association.

Selecting Historical Books.

I am pleased to note that in the selection of books bearing upon the early history of the original North American Colonies and also the war of 1812, the Book Committees of Ontario libraries are exercising additional care; many works, which in the past were purchased, are now excluded. The tendency of most writers in the United States who deal with international questions is, unfortunately, to laud their own country at the expense of British institutions, and to accept as facts statements which have long since been shown to be false. Traducing the memory of United Empire

Loyalists has been a favourite theme with such authors. The greatest care should be taken to prevent the circulation of books of this character through the medium of our Public Libraries.

Books Presented.

During the year Messrs. Charles Scribner & Sons, New York, presented this Department with 142 volumes, including History, Fiction, Literature, Natural History, Art and Pedagogy. The collection is a valuable one and has been transferred to the Education Library, where it can be inspected by intending purchasers for Public Libraries in the Province.

Some Public Libraries in Ontario

For the assistance of Library Boards contemplating the erection of new libraries the accompanying half-tone illustrations, floor plans and descriptions have been prepared showing some of the modern Public Libraries of the Province. The list is not complete, owing to the difficulties experienced in securing photographs and blue prints.

THE SARNIA FREE PUBLIC LIBRARY.

The Sarnia Free Public Library was completed and formally opened on the 26th of November, 1903. The building is of stone and red pressed brick with cut stone trimmings, a metal dome and slate roof. The size of the building is 65 x 80. In the basement is an auditorium 32 x 42, men's smoking room 19 x 19, men's lavatory, cloak room, furnace and coal room, and a storage room 22 x 22; there is also a large room 62 x 40 which is unused at present, but will be put to such uses as the needs of the Library may deveop.

The auditorium may be used by any body of a public or semi-public nature, without charge. The Historical Society, The Children's Aid Society, The Medical Association, The Camera Club, and a number of literary and other societies regularly meet in this room.

The smoking room is supplied with newspapers and tables for chess and checkers are provided.

The rooms on the main floor are a General reading room 35 x 20, a Children's room 20 x 20, a Board room 12 x 19, Rotunda 22 x 22, the Librarian's office, ladies' lavatory and a combined stack and reference room 30 x 54.

The Children's room contains all books for juveniles on shelves around the walls. These books may be taken for reading in the room without the intervention of any attendant, or, if desired for home use, a book is taken to the Librarian's counter and charged against the borrower. In the Children's room the chairs and tables are graduated in size so as to accommodate children of all ages. The walls are hung with pictures and the tables are supplied with children's magazines and periodicals.

The Librarian's counter projects into the rotunda, thus giving him supervision of all rooms on the main floor. The Board room is also used for small public meetings, when it is not necessary to use the auditorium. The Medical Association has its own library on shelves around the walls of this room.

The west wing of the stackroom is for reference books. The width of the aisles between the stacks is 5 feet. Chairs and tables are provided for those desiring to read in the stackroom.

The interior finish and fittings are in oak. The floors are maple. Book stacks are steel, 8 feet in height, with the exception of the Children's room, where there are oak wall cases.

Provision was made in the original plan for increasing the capacity of the stackroom. After moving into the building the stackroom was found to be too small, and in 1905 a second application was made to Mr. Carnegie for $5000.00 to enlarge this room. The total cost of the building exclusive of lot was $20,000.00.

The furniture, which is of special library design, cost $1,500.00 The building is heated by hot water, with grates in a number of the rooms. This system has proved most satisfactory, the consumption of coal not exceeding 25 tons a year.

In 1902 the Board received $15,000.00 from Mr. Carnegie, and in 1905 $5,000.00.

The Board in 1902 applied through the Mayor to Mr. Carnegie for a grant for a Library building. Mr. Carnegie offered $15,000.00, provided the Council guaranteed an income of not less than ten per cent. of the gift, and furnished a site. The Council accepted this offer by resolution, a certified copy of which was sent to Mr. Carnegie.

A site was given on Victoria Park. The grant was paid to the Library Board on progress certificates from the architect.

In 1905 a second application was made to Mr. Carnegie by the Board directly, for $5,000.00 to enlarge the stackroom. This was granted on the usual terms.

At the time of the opening of the Library the Board was composed of R. J. McArthur, Chairman; J. J. Spereman, Secretary; Mayor Barr, Rev. J. R. Hall, Robert MacAdams, H. W. Mills, D. D. Moshier, M. Sullivan, and Norman Gurd. The staff consisted of William Sweet, Librarian; Patricia Spereman, Assistant Librarian, and Arthur Payne, Janitor. Free access to all books was inaugurated in 1903, and has been permitted ever since. There is no age limit, but children cannot become members without the consent of parents.

The system of classification in use is the Dewey Decimal system, with card catalogue.

Since moving into the new building the Board has devoted special attention to the Library's work for children. Books suitable for children in every department of literature have been freely purchased, so that the children's library is now an epitome of the adult's. The Assistant Librarian has been given special charge of the children's work. The policy of the Board has not been to send out Travelling Libraries to the schools, but rather to bring the children to the Library. The Board has secured the co-operation of the teachers, who attend at the Library and make lists of suitable books for the different forms. Copies of these lists are given to the children's librarian. Scholars in each form are given lists of books to be read during the term. Some of the teachers also bring their scholars to the Library. Suggestions are also received from the teachers as to suitable books which should be added to the Library.

The Library Board publish reviews of important books in the town papers. These reviews are written by people who are especially interested in the subject covered.

No fees are collected from borrowers for cards or otherwise, except by way of fines for injury to books or for keeping books overtime. Any resident of the town, on signing an application may become a member without a guarantor, whether he is a property owner or not. Two books may be drawn at one time, provided only one is fiction.

The only serious defect in the building was the small stackroom. This was remedied by the extension before referred to.

Goderich Public Library.

Library completed: January, 1905.
Library opened: March 3rd, 1905.
Materials used in building: Stone and red brick.
The building is triangular. The three longest sides are 35-26 and 25 ft.
Basement: Lecture room, Gymnasium, Coal room, Furnace room.
Height of ceiling in basement: 11-6.
Ground floor:
General Reading room: 28x24.
Ladies' Reading room: 25x21.
Stack room: 31x22.
Board room: 22x18.
Ladies' Toilet room.
Height of ceiling: 18 ft.
Second floor:
Six rooms in this flat; height of ceiling: 10 ft.
Wood used for interior finish: Pine and ash.
Wood used for fittings: Oak.
Book stacks: Oak.
Height of stacks: 6-6.
No provision made for increasing capacity of stack room.
Cost of building exclusive of site: $9,273.
Cost of furnishings: $900.
System of heating: Combination of hot water and hot air.
Defects: In severe weather one furnace is not sufficient.
Gift from Mr. Carnegie: $10,000.

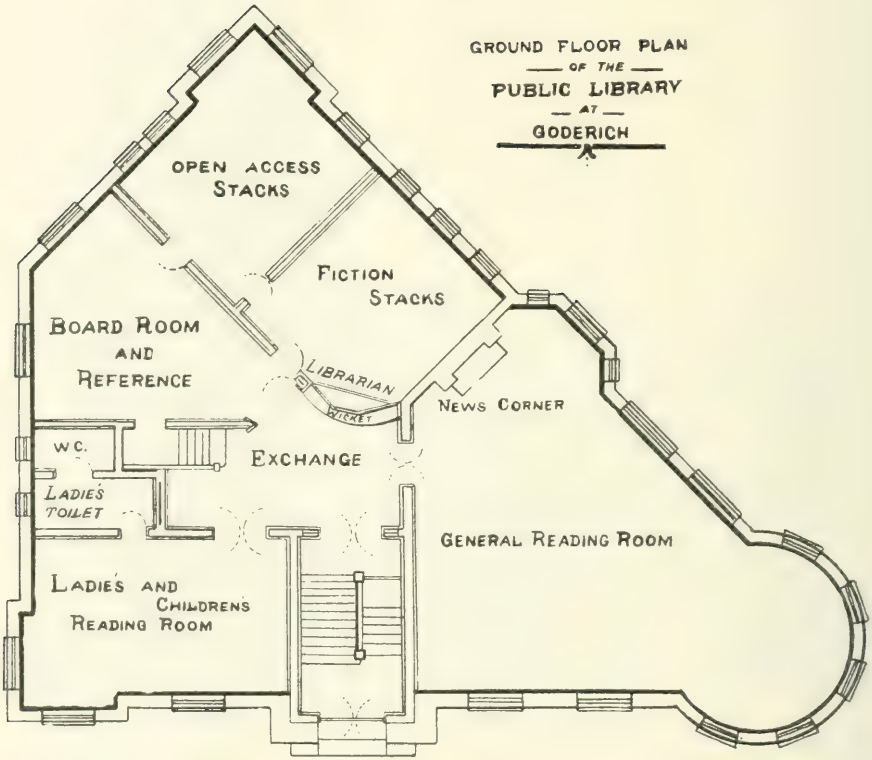
The late Mr. A. J. Moore, one of the staff of the Collegiate Institute, and also Secretary of the Library Board, suggested securing a grant from Mr. Carnegie. A meeting of the ratepayers was held and endorsed the suggestion and the gift was secured on the usual conditions, and the contract for the building let April 11th, 1903.

Members of the Library Board when library was opened:
W. T. Murney, Mayor; James Robertson, John Kernighan, Rev. Joseph Elliott, J. Elgin Tom, James H. Ligert, H. D. Reed, Judge Doyle, J. D. O'Connell.

Official staff at time of opening:
J. E. Tom, Chairman.
J. Kernighan, Treas.
D. J. Naftel, Sec.
Andrew Duff, Librarian.

Free access to the books is not permitted.
Age limit: 12 years.
A printed catalogue is used.
The building is defective; the librarian is not able to see into the reading room from the delivery desk.

Goderich Public Library.


GROUND FLOOR PLAN
— OF THE —
PUBLIC LIBRARY
— AT —
GODERICH
OPEN ACCESS STACKS
FICTION STACKS
BOARD ROOM AND REFERENCE
LIBRARIAN
WICKET
NEWS CORNER
W.C.
EXCHANGE
LADIES TOILET
GENERAL READING ROOM
LADIES AND CHILDRENS READING ROOM

St. Catharines Public Library.

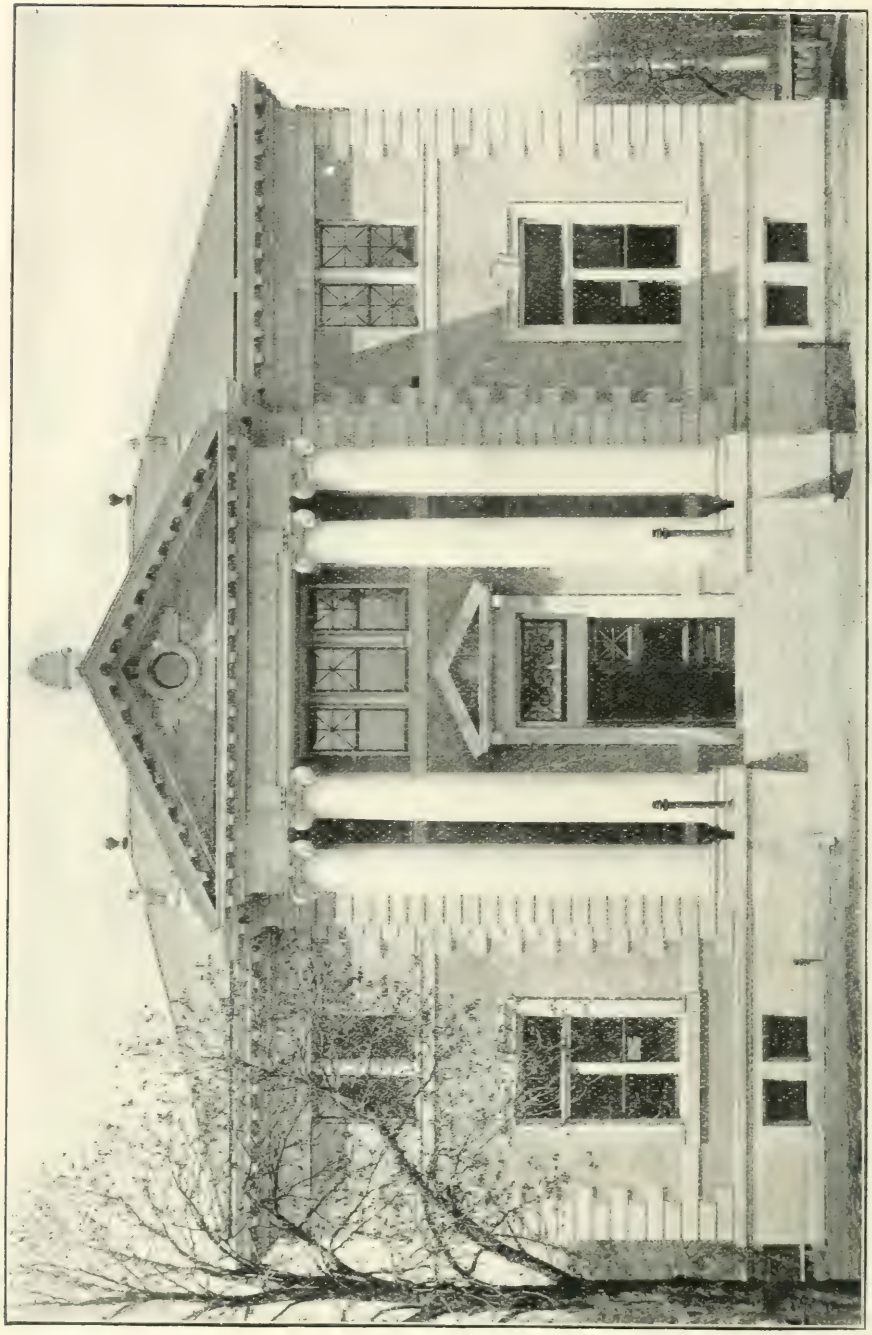
Library completed in 1904.
Library opened Jan. 2nd, 1905.
Materials used in building: Pressed brick and Roman stone.
Woods used for interior finish: Red birch and oak.
Wood used for fittings: Red birch.
Material used for stacks: Pine and red birch.
Height of stacks: 7-2.
No provision made for increasing capacity of stack room.
Cost of building exclusive of lot: $25,000.
Cost of furnishings: $3,000.
System of heating: Steam.
Gifts from Mr. Carnegie: $25,000.
Members of Library Board at time of opening:

Dr. E. M. Hooper, Chairman; Geo. C. Carlisle, Sheriff Dawson, J. H. Ingersoll, James Lawrence, A. W. McMaugh, Mayor Sweet.

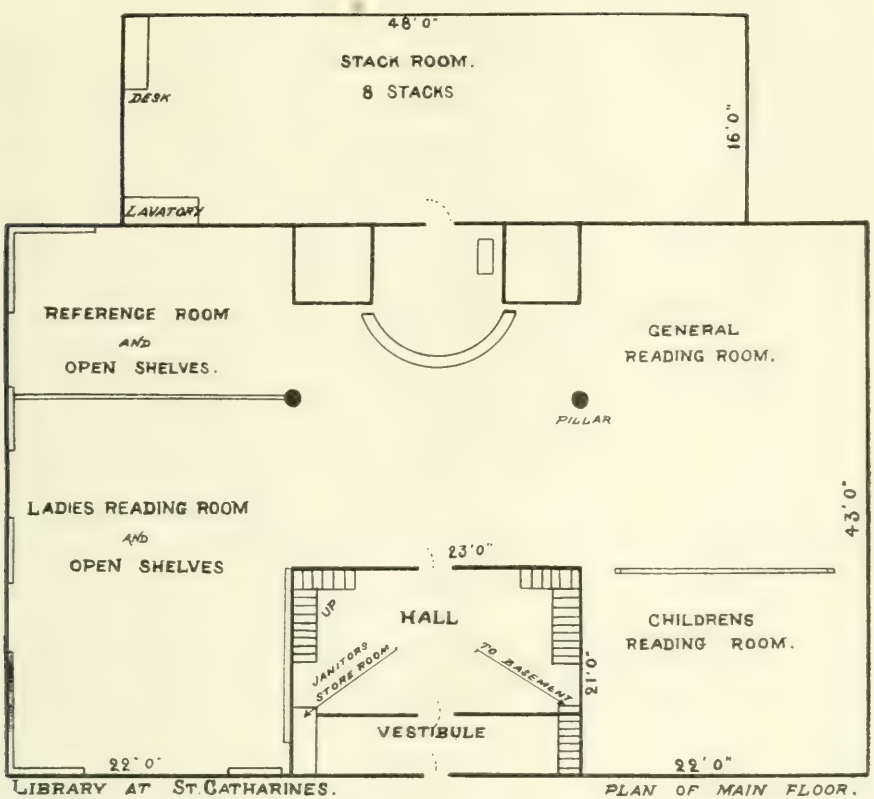
Official staff at time of opening:

James Douglass, Sec.
A. S. Martin, Librarian.
Miss L. E. May, Assistant Librarian.
Joseph Marriott, Caretaker.

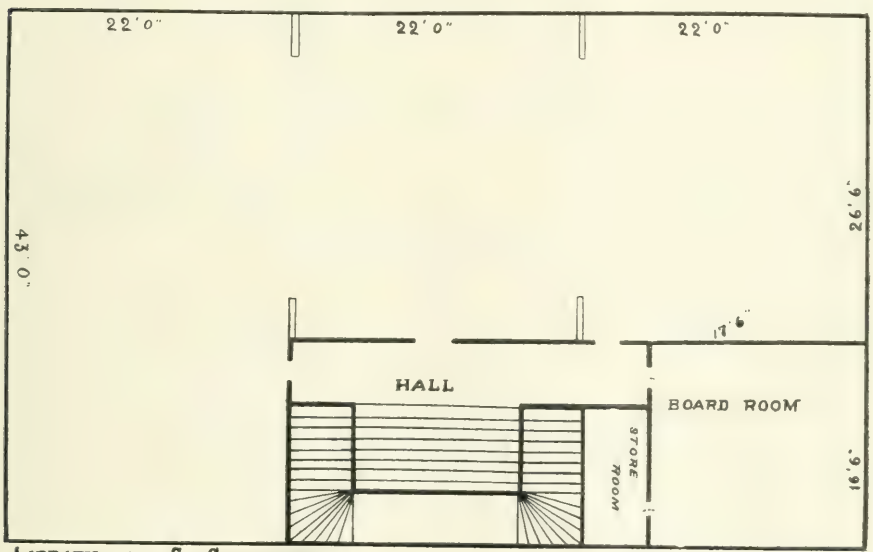
Free access to books not permitted.
There is no age limit.
System of classification: Dewey decimal.
Card catalogue in use.
Defects in library: Stack room too small for increase of library.



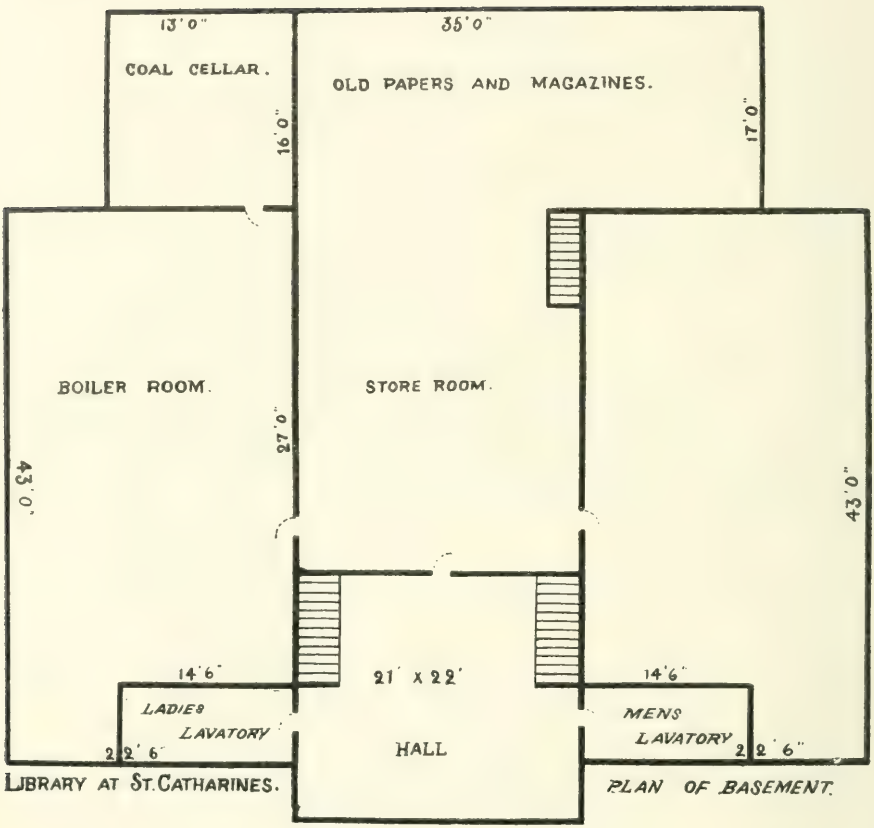
St. Catharines Public Library.



LIBRARY AT ST. CATHARINES. PLAN OF MAIN FLOOR.



LIBRARY AT ST. CATHARINES. PLAN OF 2ND FLOOR.



LIBRARY AT ST. CATHARINES.

PLAN OF BASEMENT.

NEW REFERENCE LIBRARY BUILDING, TORONTO.

After a prolonged discussion of the relative merits of sites with the Board of the Toronto Public Library, the City Council undertook to provide a site for the New Reference Library on the north-west corner of College and St. George Streets. The property decided upon measures 234 feet on College Street and 364 feet on St. George, thus providing ample accommodation for future extension of the proposed building if required.

Early in 1905 the Board prepared a programme of competition for the selection of an architect, and fixed the 31st January as the date upon which the plans were to be sent in, and offered $750 as prizes to be divided among the three most worthy. The judges were the Mayor, a member of the City Council and Public Library Board, the Chief Librarian, City Architect and a non-competing architect to be chosen by others. This Committee, after a number of meetings, reported in March 2nd, 1906, that they had not found any plans which filled the required conditions and recommended that no prize be awarded, but that the sum of $1,000 be divided among the four which, in their judgment, were the most satisfactory, and also that the four architects whose plans were thus chosen were to be asked to modify them in accordance with certain conditions specified. Of the modified plans sent in, in accordance with this recommendation, the committee chose those prepared by Messrs. Wickson, Gregg and A. H. Chapman, and their action was promptly confirmed by the Board.

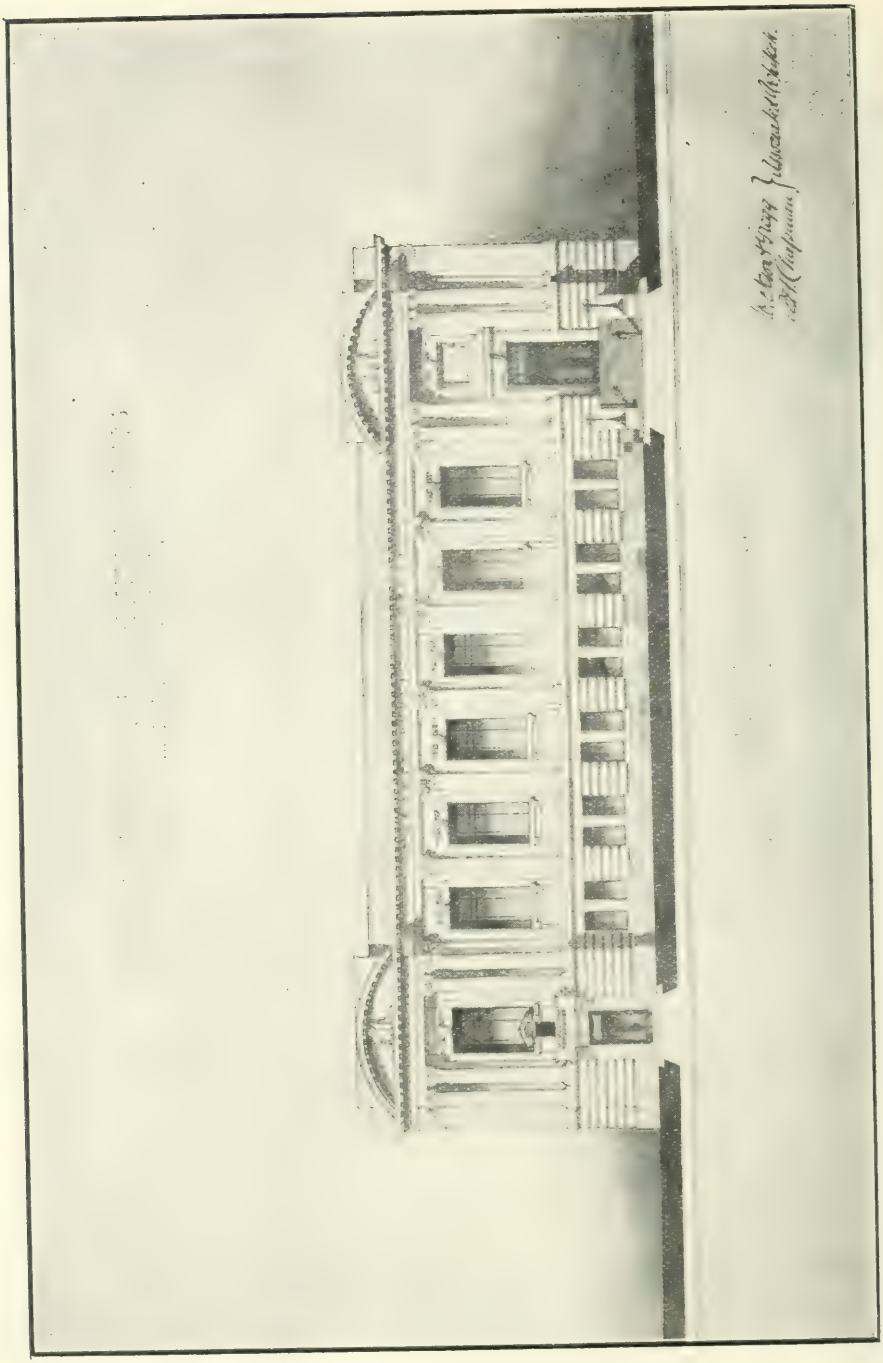
Working plans were prepared during the summer of 1906 and tenders invited in the month of October. The different portions of the work were awarded to the following contractors:—

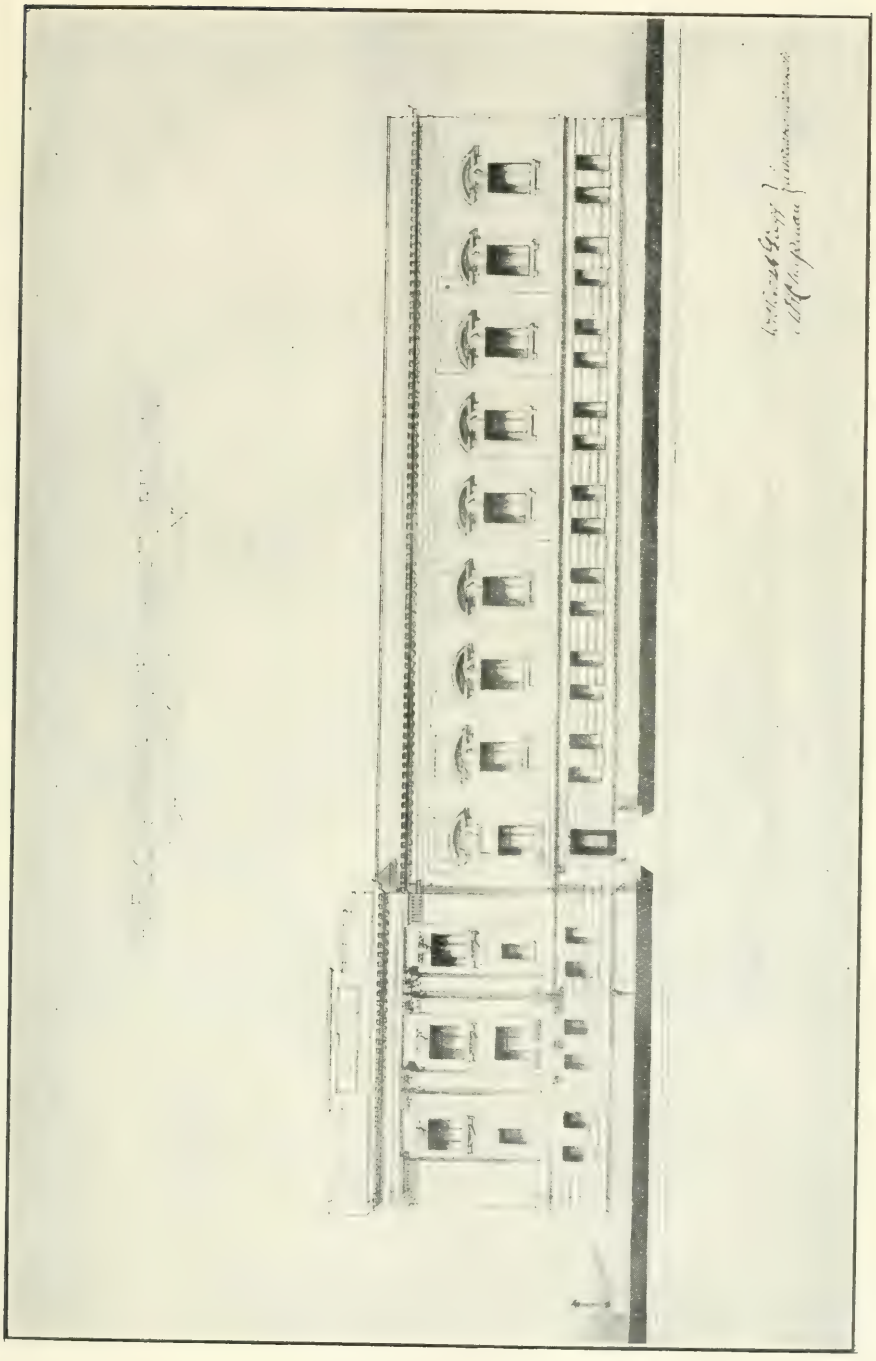
Excavation—Page & Co.	$3,500 00
Masonry and Brickwork—Brown & Love	68,720 00
Concrete and Cement—A. Gardner & Co.	24,820 00
Terra Cotta Excelsior Terra Cotta Co., New York	12,540 00
Carpenter and Joiner Charles Rogers Sons & Co.	14,350 00
Painting and Glazing—Joseph McCausland & Son	5,990 00
Plastering—Hoidge & Sons	32,968 00
Roofing and Sheet Metal—A. B. Ormsby, Ltd.	3,240 00
Steel Work—McGregor & McIntyre, Ltd.	8,884 00
Electric Wiring and Telephone—W. J. McGuire & Co.	5,030 00
Stack Work—Snead Co. Iron Works, Jersey City	31,400 00
Plumbing—J. E. Gray	2,464 00
Steam Heating—W. J. McGuire & Co.	15,600 00
Elevators—Turnbull Elevator Mfg. Co.	1,475 00
	$230,981 00

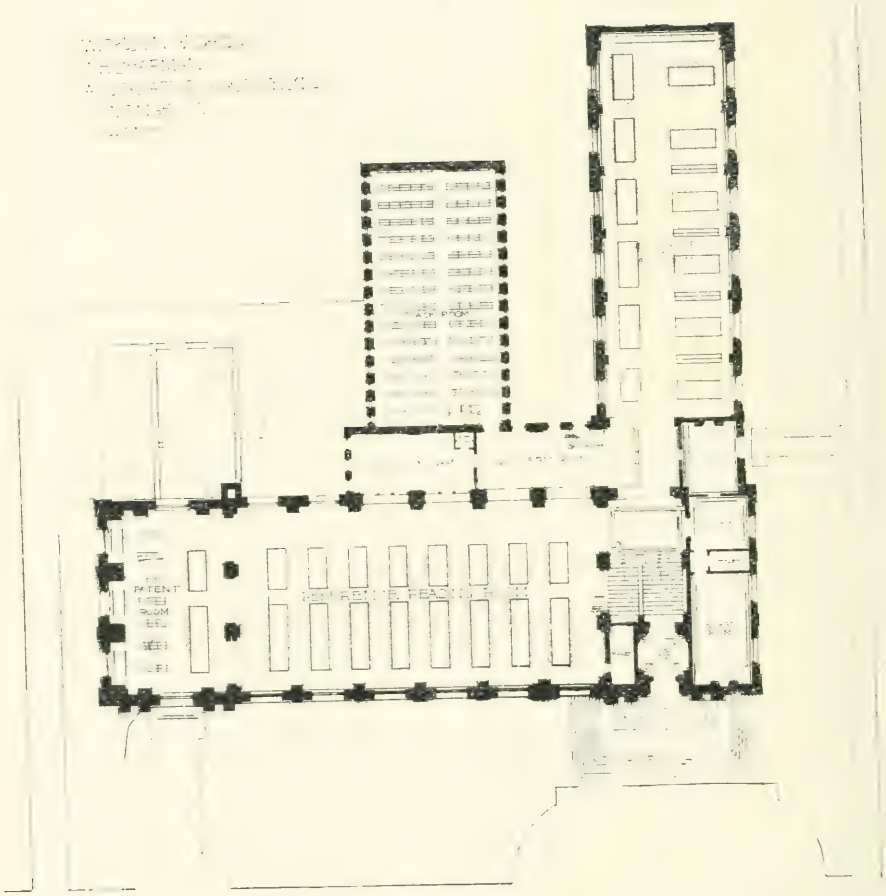
The Corner Stone of the new building was laid by the Hon. Chief Justice Falconbridge, on November 27th, 1906. His Honor the Lieutenant-Governor occupied the chair and a large number of distinguished citizens were present.

The contractors have been active in pushing on their work, and by the 1st January the foundations of the whole building were ready.

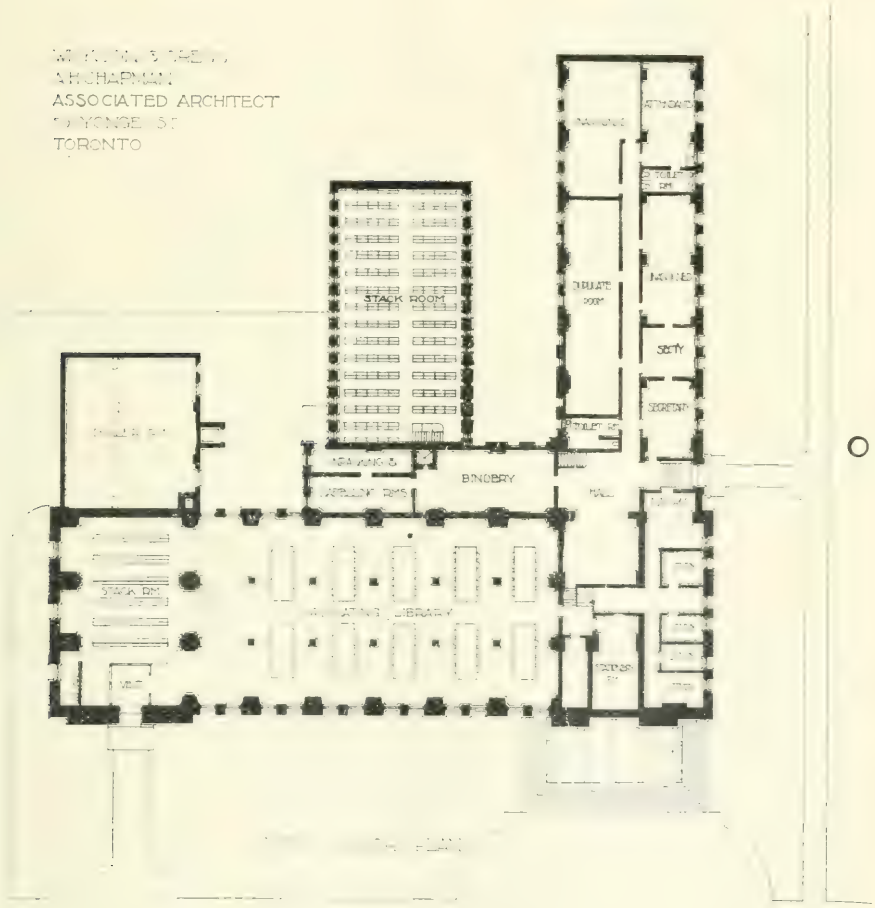
As the name chosen by the Board intimates, the new building is for a Reference Library for the City of Toronto, so that its whole character is based on this intention. It is, however, intended to occupy the ground floor with a small branch library of about 10,000 volumes, and a door has been provided on the western end where access is given to this circulating library. A large reading-room with railed divisions will be made separating the reading quarter from the section set apart for the general readers, for teachers



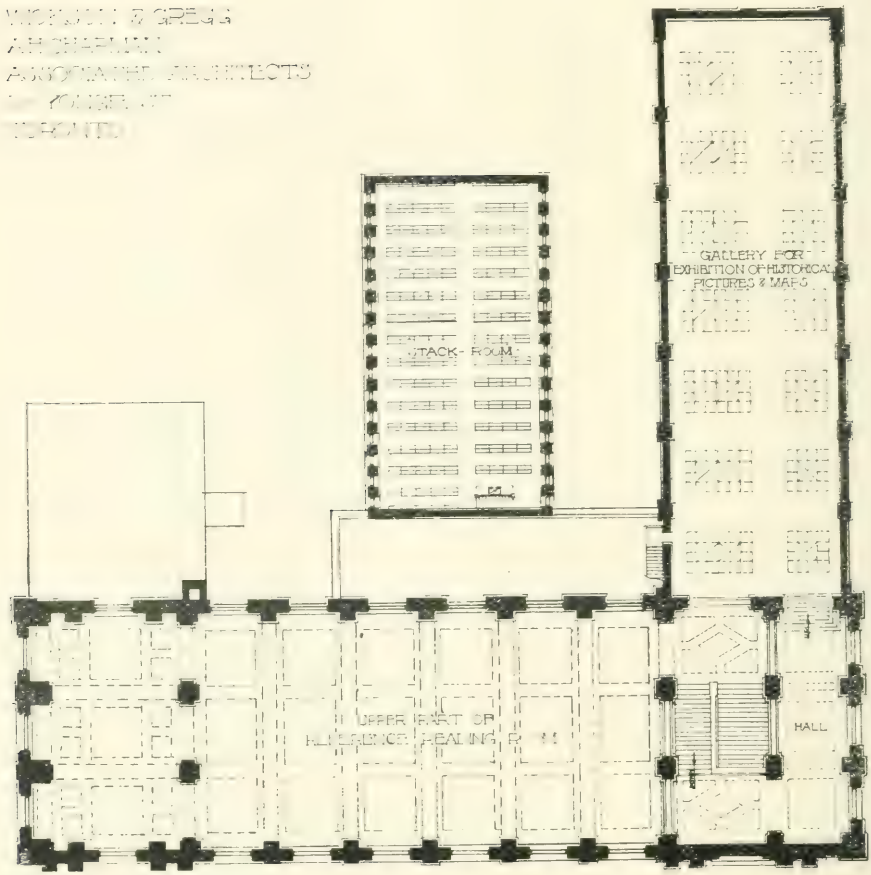



PATENT
MODEL
ROOM

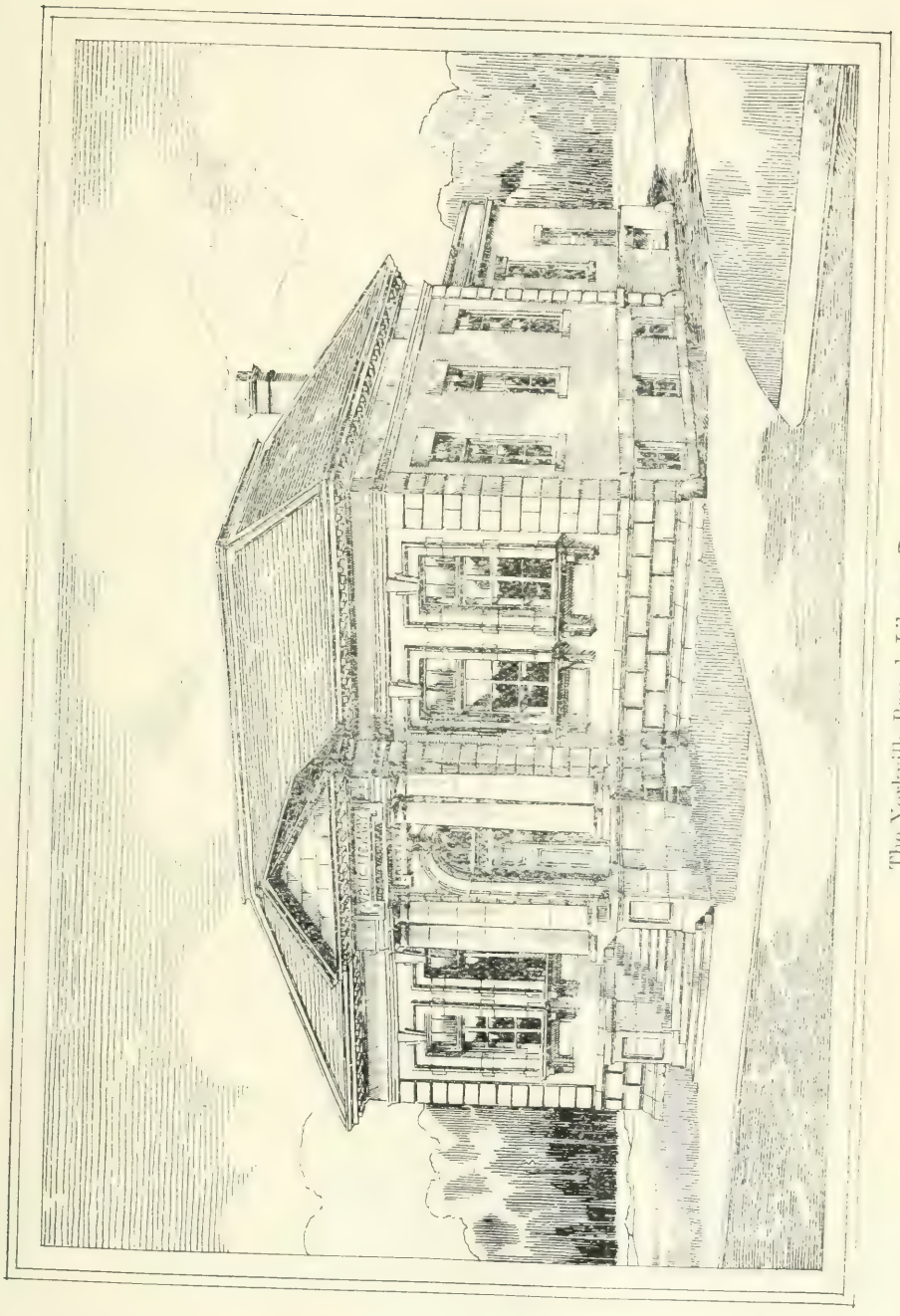
PUBLIC
REFERENCE LIBRARY
FOR THE
CITY OF TORONTO



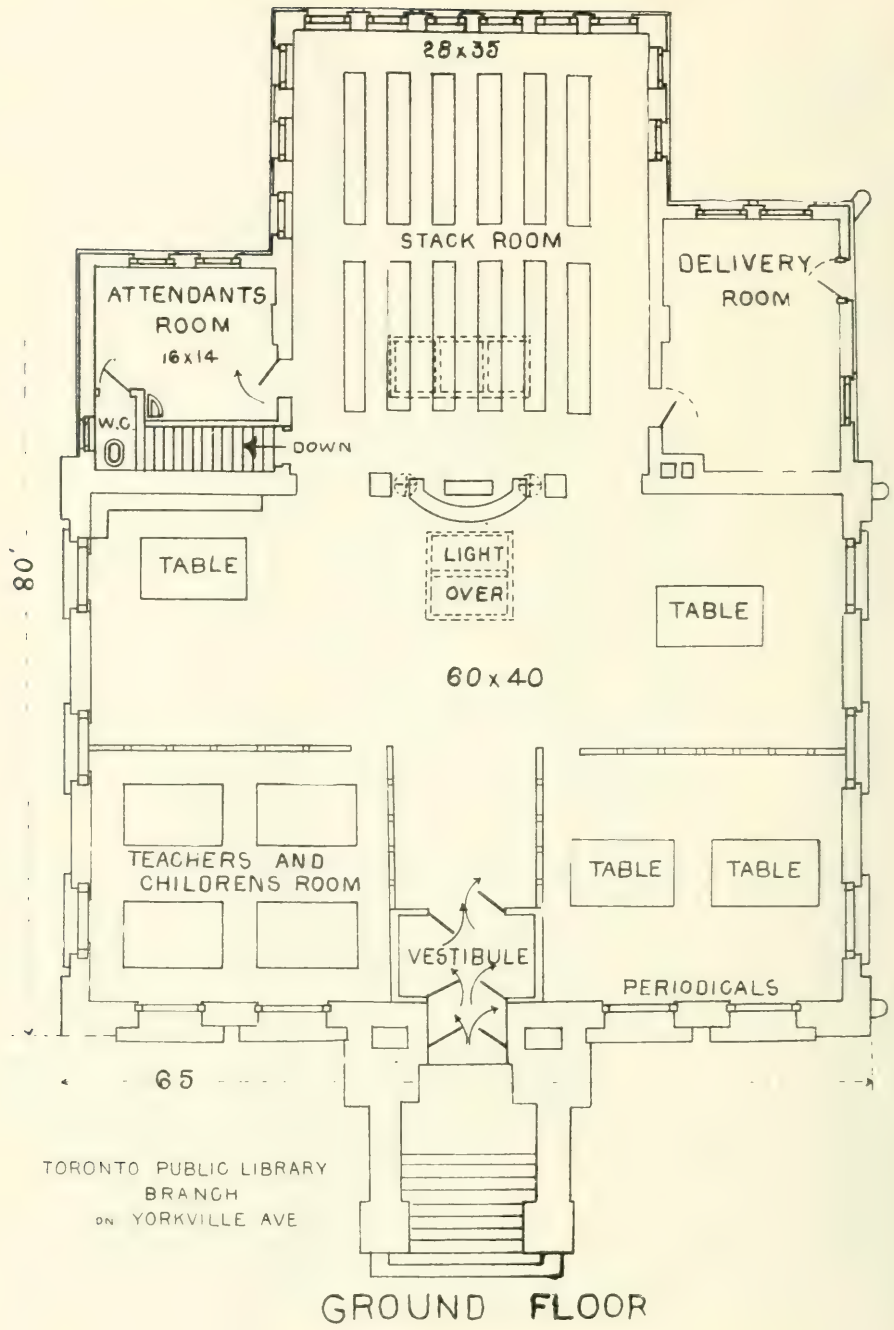
PUBLIC REFERENCE LIBRARY FOR THE CITY OF TORONTO



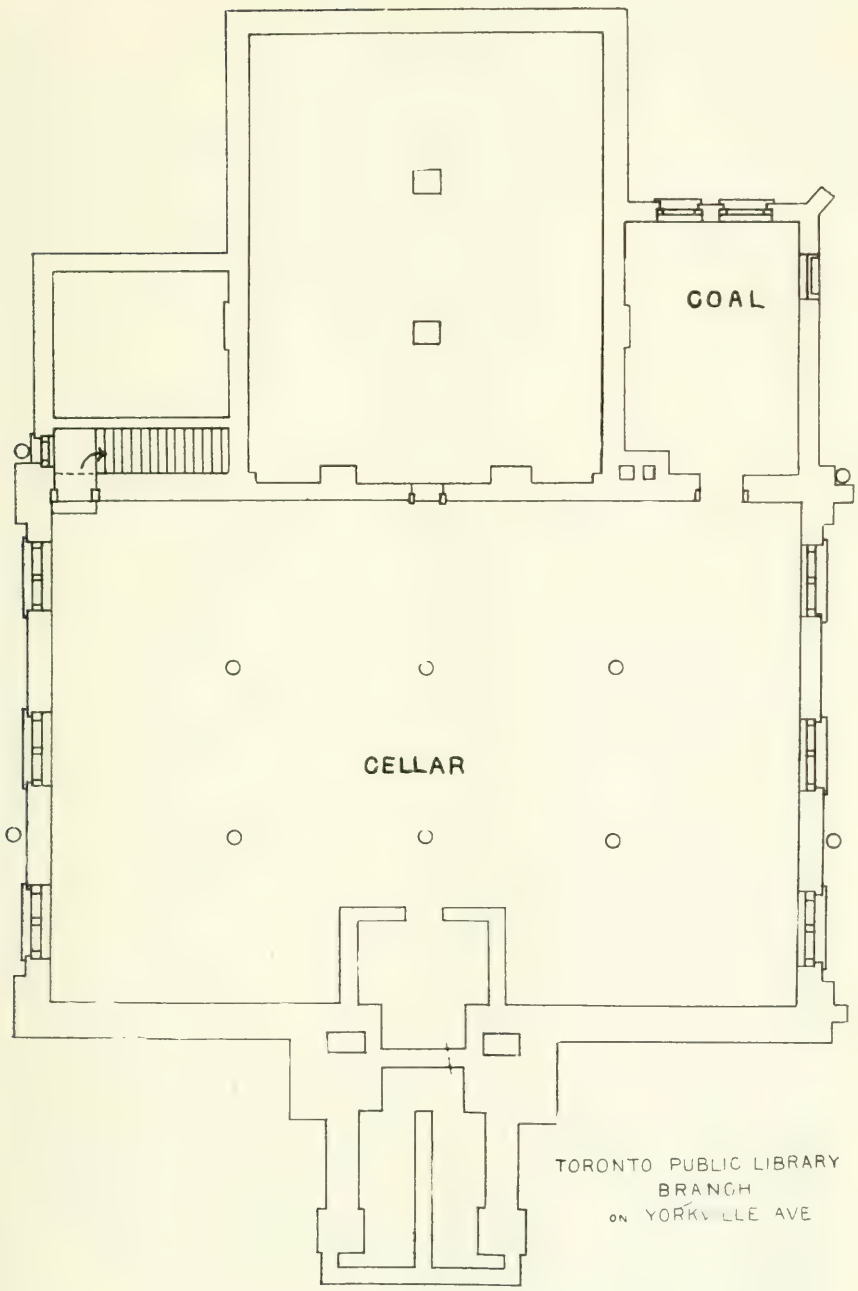
THIRD FLOOR PLAN



The Yorkville Branch Library, Toronto.



GROUND FLOOR



TORONTO PUBLIC LIBRARY
BRANCH
ON YORKVILLE AVE

BASEMENT

and children. The room will be about 16 feet high and lighted from three sides. On the same floor on St. George Street the offices and quarters for the staff will be placed in a series of rooms which will also provide accommodation for duplicates and necessary work-rooms.

The first floor will be attained by a stone stair from the south-east corner of the building, forming the main entrance, which will be devoted entirely to the Reference Library. It includes a large room 136 feet in length by 50 feet in width, and which is intended entirely for the use of readers. Immediately behind the main reading-room are the cataloguing and delivery rooms, and still further back is the main building of the stack-house, 72 x 40 feet. It will consist of five stories of iron and glass construction, amply lighted on both sides and completely isolated from the rest of the building, the only entrance into it being from the rear of the delivery-room.

On the St. George Street side are the offices of the Board and Librarian, and a long gallery for the keeping and use of bound volumes of newspapers and art books. The second story, reached by a staircase from the main hall, is composed of one long gallery facing St. George Street, lighted with skylights, intended for the exhibition of rare maps and local pictures.

The point which differentiates this library from any yet attempted in Canada, and from most in the United States, consists, first, in the almost entire elimination of useless halls and passages, and second, in the centralization of the whole of the work of the library, in the centre of the building, so that the attendants at the delivery desk have complete observation over the entire floor and at the same time are in close touch with the cataloguing-room and stack-house. Third, the stack-house is absolutely fire proof, and the rest of the building is what is called slow combustion. The walls are of brick and stone, the different floors are of iron and cement, so that little else other than the furniture is of wood. Fourth, the cataloguing-room is immediately over the bindery (which is supplied with a hoist) and has on one side the stack-house and on the other, the rear of the card cataloguing case. Fifth, the plan provides for any extension on its present site, without interfering with the light or safety. The stack-house and reading-rooms are estimated to hold about 300,000 volumes, and the cost, including architect's fee, will be about $260,000. The amount given by Mr. Carnegie for the building was $275,000.

Berlin Public Library.

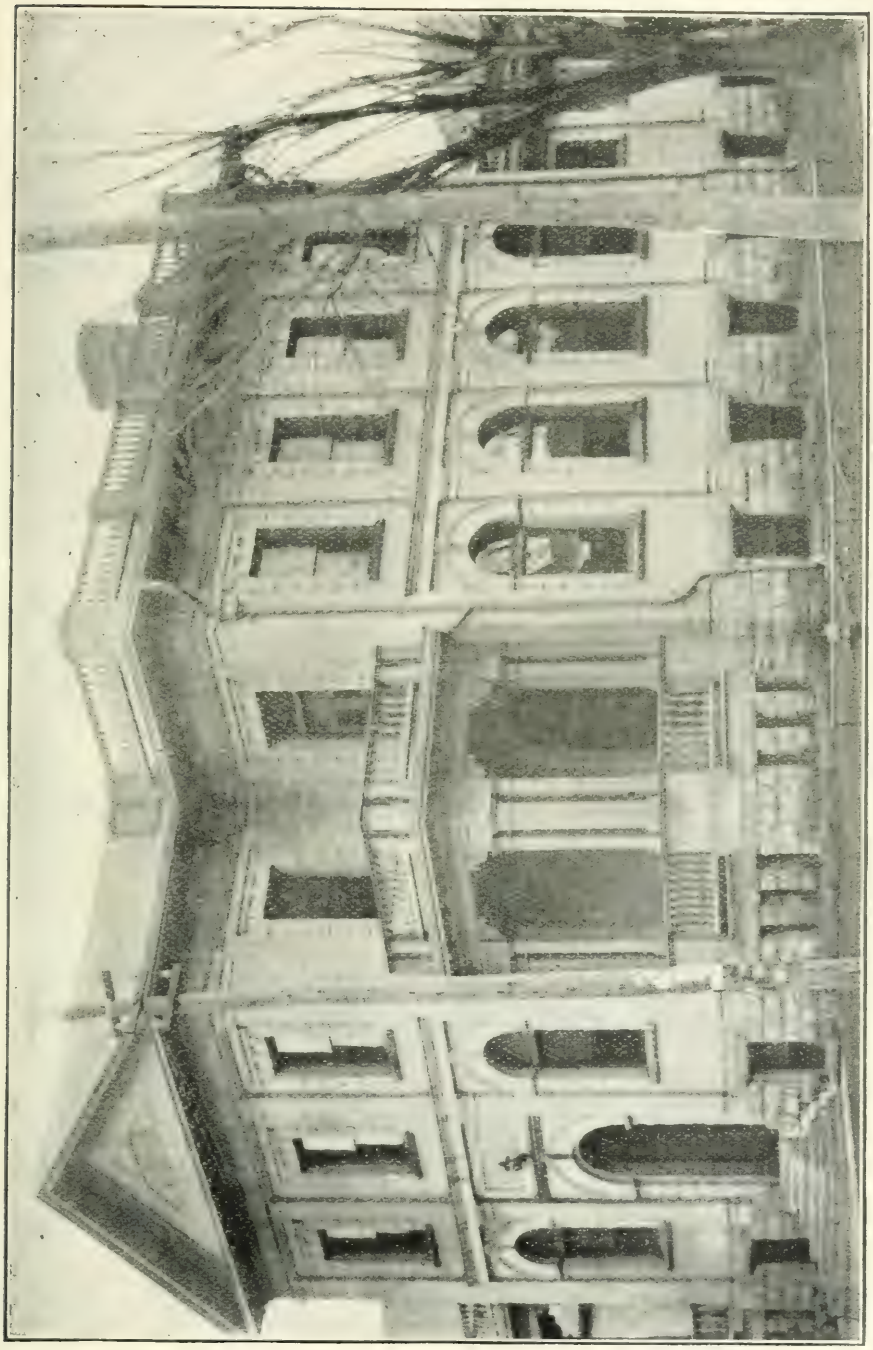
The first steps taken to secure a Carnegie Library for Berlin were taken in 1900, but owing to opposition the matter was dropped. In 1901 an application was made to Mr. Carnegie for a gift of $15,000, which was granted. When tenders for the building were opened it was found that they exceeded the grant by $4,000. A second application for this sum was made and also granted. A further sum of $4,000 was given for furnishing the building. The corner stone was laid October 15th, 1902, and the library formally opened January 9th, 1904.

The members of the Board at that time were:—

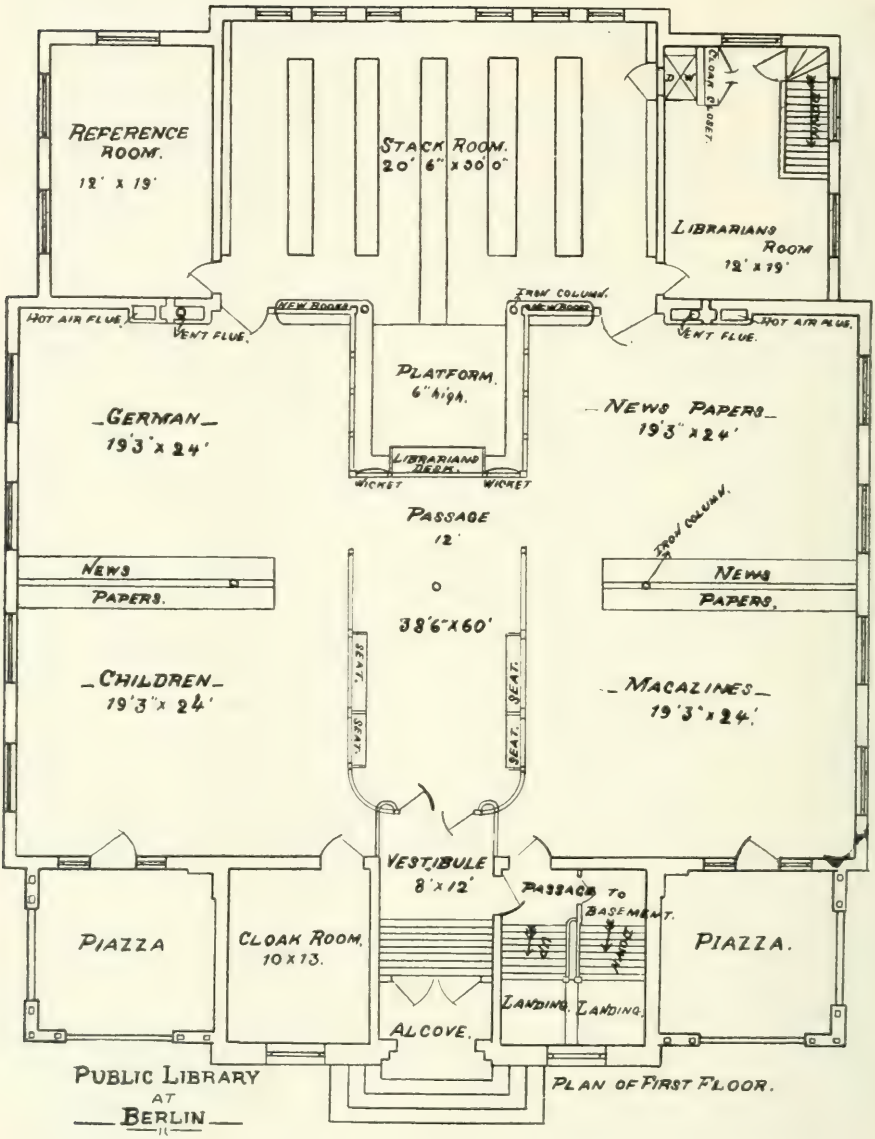
Rev. W. A. Bradley, B.A., Chairman.
D. Forsyth, B.A., Secretary.
Rev. J. W. German, Rev. R. Von Pirch, Rev. Jos. Schweitzer, Robert Smyth and Karl Mueller.
Effie A. Schmidt, Librarian.

Library completed January, 1904.

Material used in building: Pressed brick.

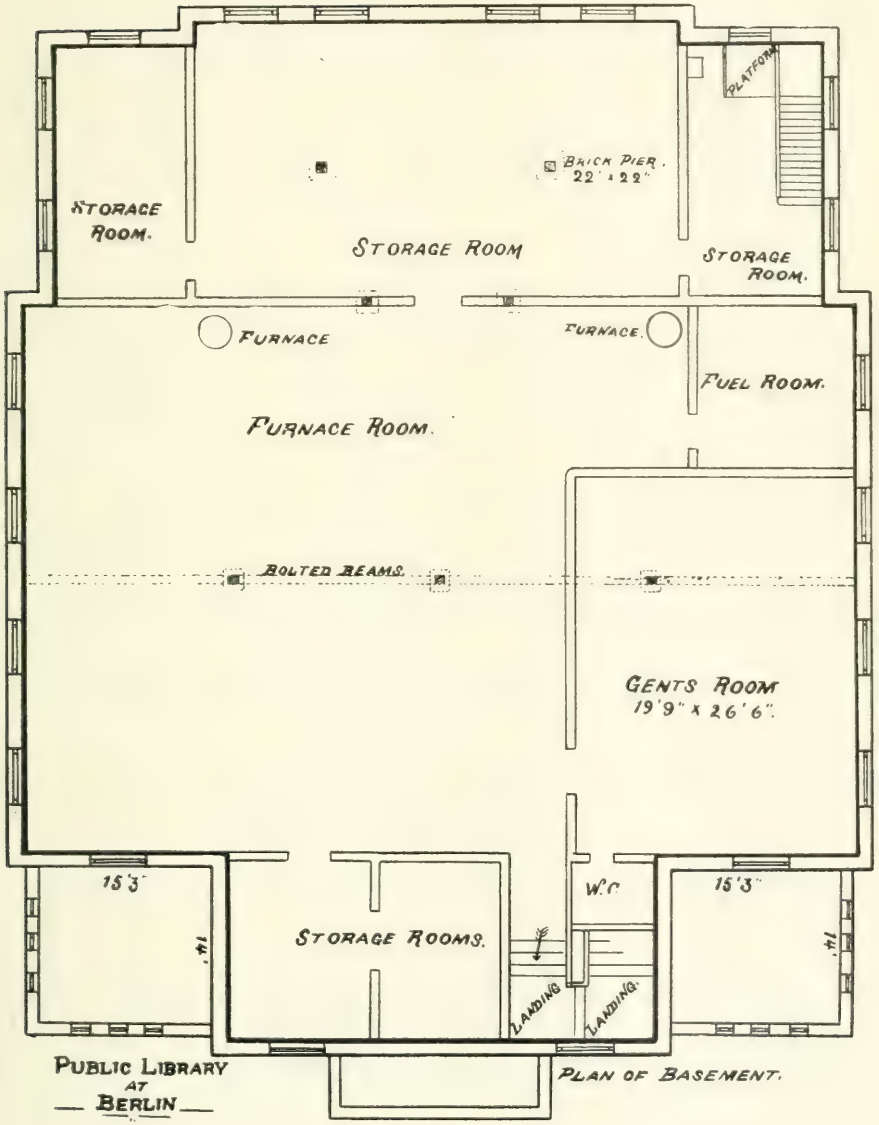


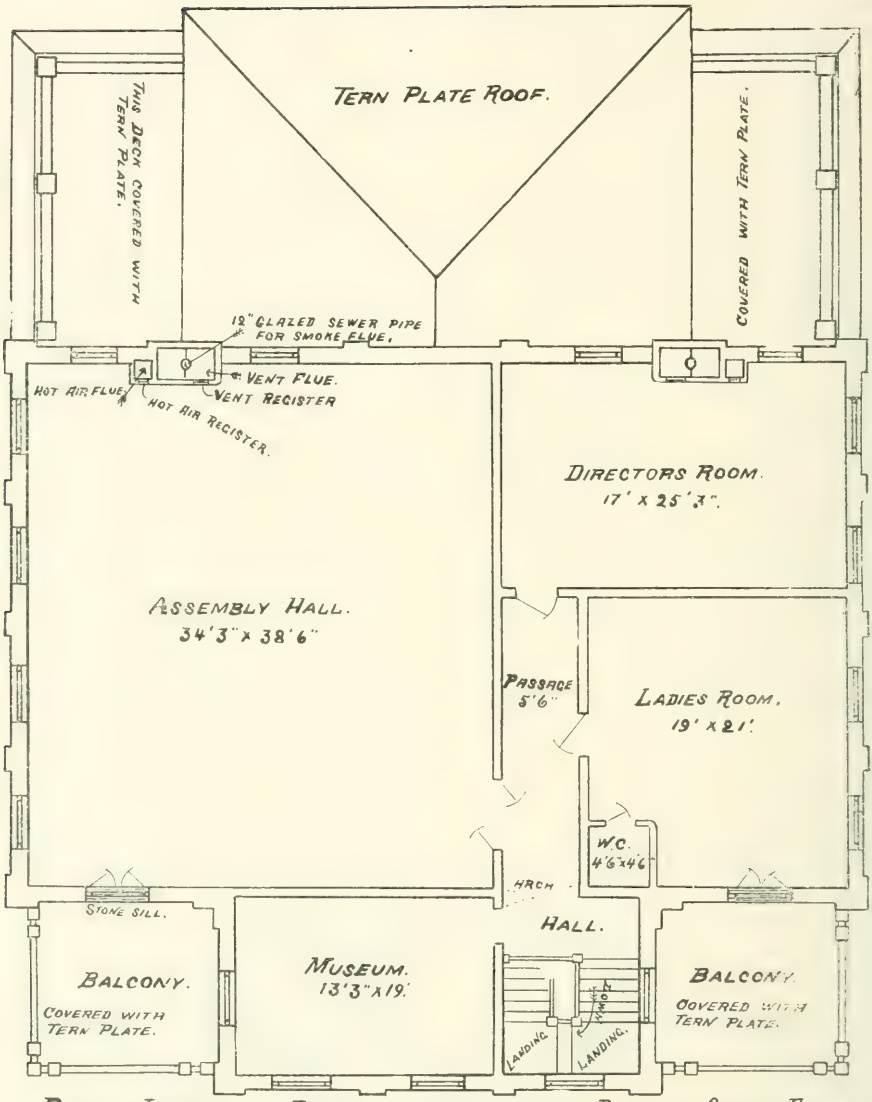
Berlin Public Library



PUBLIC LIBRARY AT BERLIN

PLAN OF FIRST FLOOR.


PLATFORM
BRICK PIER. 22" x 22"
STORAGE ROOM.
STORAGE ROOM
STORAGE ROOM.
FURNACE
FURNACE.
FUEL ROOM.
FURNACE ROOM.
BOLTED BEAMS.
GENTS ROOM 19'9" x 26'6".
15'3"
14"
STORAGE ROOMS.
W.C.
LANDING
LANDING.
15'3"
14"
PUBLIC LIBRARY AT BERLIN
PLAN OF BASEMENT.



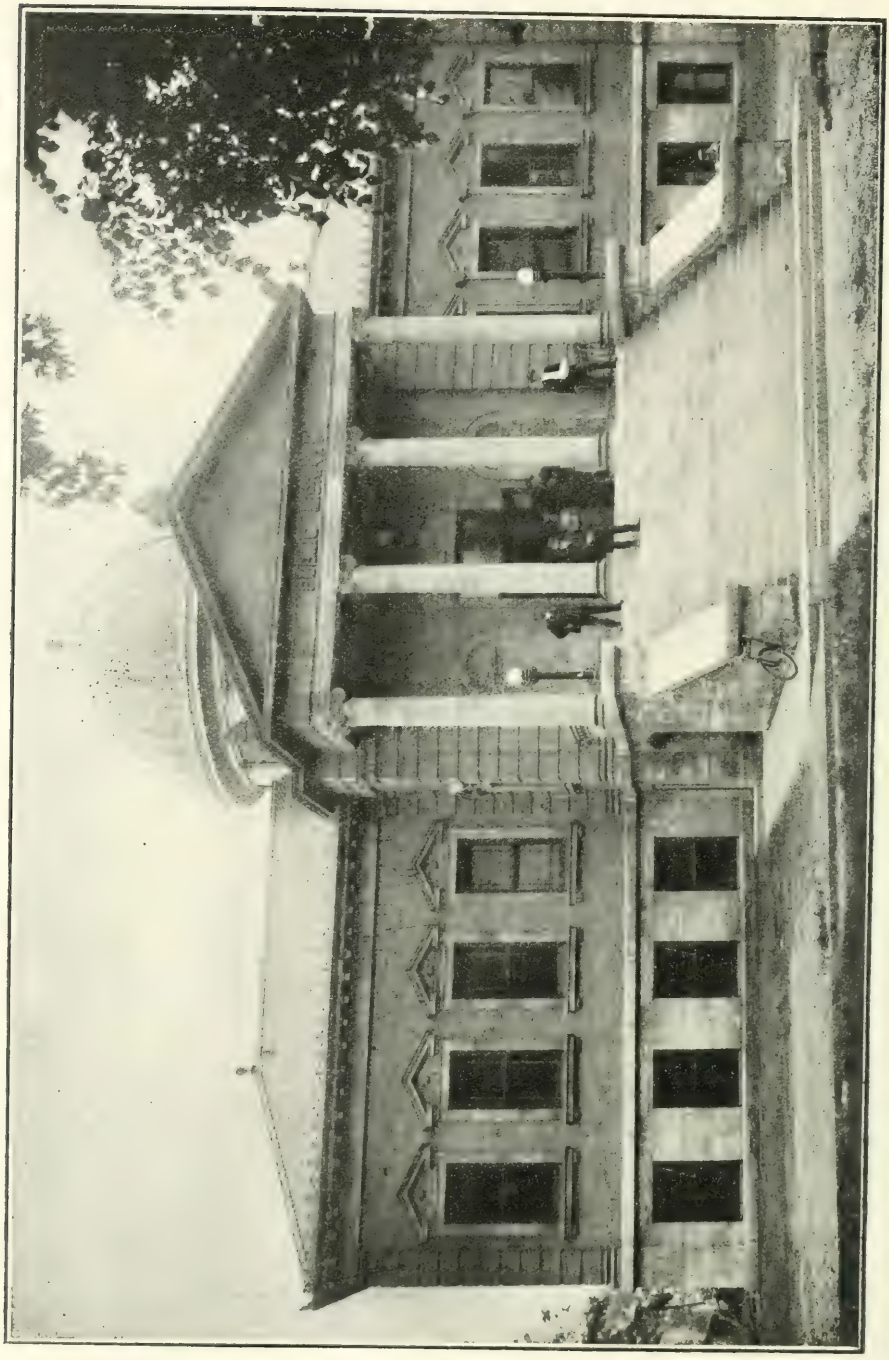
PUBLIC LIBRARY AT BERLIN. ——— PLAN OF SECOND FLOOR.

The Basement:—
Smoking room: 16 x 26.
Stack-room: 12 x 30.
Furnace-room: 39 x 40.
First Floor:—
Reading room: 60 x 39.
Study: 18 x 12.
Librarian's room: 18 x 22.
Stack room: 20 x 29.
Cloak room: 11 x 10.
Large entrance.
The reading room is divided as follows:—
German department and children's department on one side of the entrance. Magazine and newspaper department on the other side.
Second Floor:—
Museum: 13 x 20.
Lecture hall: 34 x 39.
Board room: 17 x 25.
Women's Club: 19 x 21.
Material used in finishing: Quarter-cut oak.
Material used in furnishings: Quarter-cut oak.
Height of stacks: 7 feet.
Provision has been made for increasing capacity of stack room.
Cost of building, exclusive of furnishing: $20,000.
Cost of furnishings: $4,500.
System of heating: Combination.
Low pressure steam heating would be preferable.
Gift from Mr. Carnegie: $24,500.
Free access is given to all books except fiction.
Age limit: 14 years. Parents can take out cards for children.
Dewey decimal classification in use.
Defects:—
The entrance to the building is too small and not prominent enough for the size of the building. It is the intention of the Board to remedy this defect.
A special catalogue has been prepared for children.
Card catalogue in use.

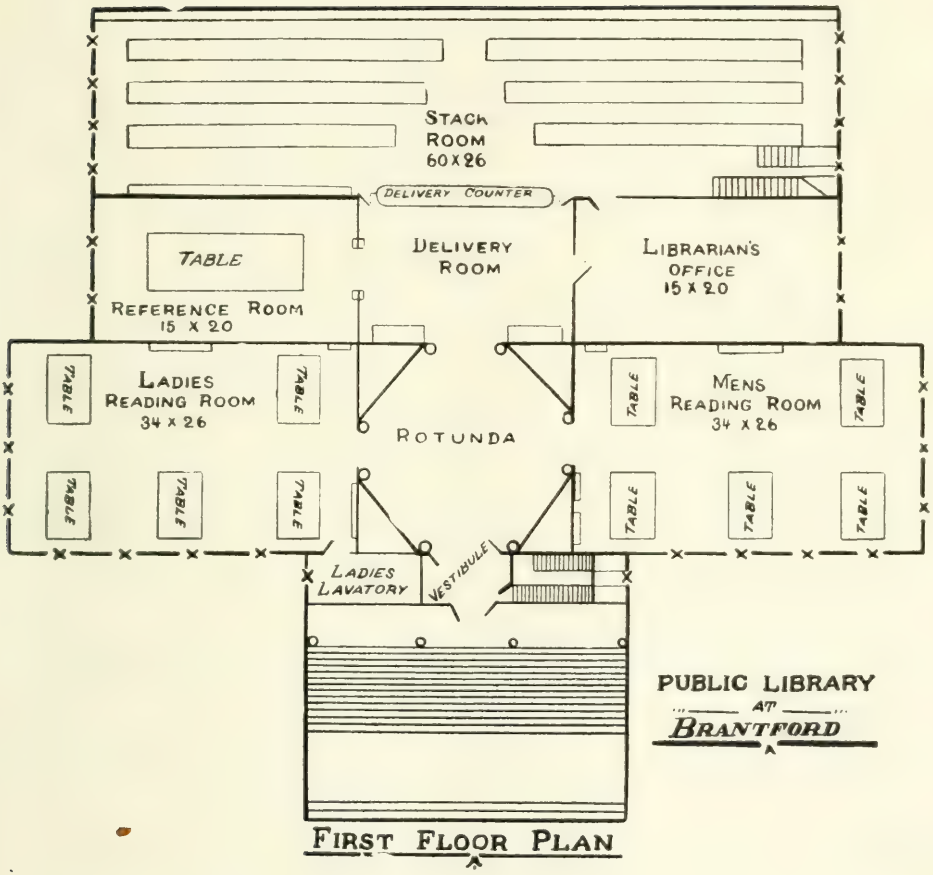
Brantford Public Library.

Brantford, according to current report, had a Public Library at an early period of its history, even before the Rebellion of 1837. This event led to its temporary extermination. On or about the year 1853 it was revived. One of the first librarians was the late James Woodyatt, and under his management the library reached a fair degree of prosperity. It was known under the name of the "Mechanics' Institute," and was supported mainly by the fees of members and the proceeds of an annual excursion. In the year 1879 the library was burned and all the records perished.

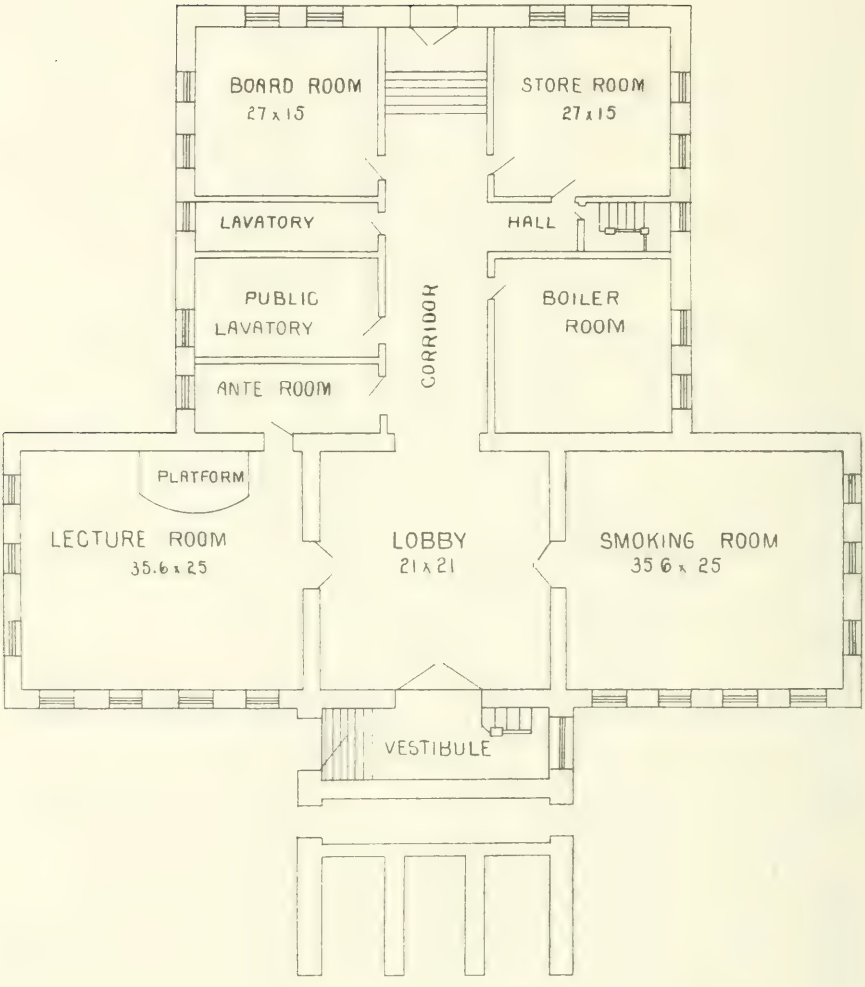
On the passing of the Act of March 1882, providing for the establishment of Free Libraries, the Board of the Mechanics' Institute set about effecting a change, and on the 30th of November, 1883, a petition was put in circulation and articles published in the local papers with this end in view. The necessary by-law passed the council unopposed on December 3rd, 1883,



The Brantford Public Library


STACK ROOM 60X26
DELIVERY COUNTER
TABLE
REFERENCE ROOM 15 X 20
DELIVERY ROOM
LIBRARIAN'S OFFICE 15 X 20
LADIES READING ROOM 34 X 26
ROTUNDA
MENS READING ROOM 34 X 26
TABLE
LADIES LAVATORY
VESTIBULE
PUBLIC LIBRARY AT BRANTFORD
FIRST FLOOR PLAN

BRANTFORD . PUBLIC . LIBRARY.



BASEMENT PLAN

and was voted on and carried on the 7th of January, 1884. The Public Library occupied quarters in the Heyd Block, opposite the Post Office, till July, 1904, when it was moved to the present handsome building opposite Victoria Park.

In the early part of the year 1902 rumours of Mr. Carnegie's benefactions began to circulate. Fortunately his Honor, Judge Hardy, dropped a note of inquiry to the eminent philanthropist, which his secretary speedily answered, offering $30,000 for the erection of a Library Building if the City of Brantford would pledge itself by resolution of council to support a Free Public Library at cost of not less than $3,000 a year, and provide a suitable site. The necessary resolution was passed by the City Council, and the by-law to provide for the purchase of a suitable site was passed on the 20th October, 1902, and the George Street site, opposite Victoria Park, was selected. The plans of Messrs. Stewart, Stewart & Taylor, Architects, Hamilton, were accepted and the contract for the erection of the building was awarded to the Schultz Bros. Co., Limited, of Brantford, and the work was immediately proceeded with.

The corner stone was laid on December 16th, 1902, by the Rev. Dr. Mackenzie, Chairman of the Library Board, and the building was completed and ready for occupation on July 1st, 1904.

In March, 1904, the Library Board desired to make alterations of the interior finish of the building and communicated with Mr. Carnegie, asking him if he would make an extra grant of $5,000 for this purpose. The request was promptly acceeded to, thus making $35,000 the total amount of Mr. Carnegie's grant for the Brantford Public Library.

Members of the Library Board on the date of the opening of the building:—

Rev. Dr. Mackenzie, Chairman; M. J. Kelly, M.D., LL.B., R. S. Schell, Rev. P. Lennon, J. P. Hoag, M.A., Geo. S. Harold, Wm. Cutmore, G. H. Muirhead and M. K. Halloran.

The names of the members of the Library Staff:—

E. D. Henwood, Librarian; Miss Fanny E. Lindsay, Miss Estelle Carling, Miss Jennis A. Draper, Assistants, and John Chapman, Janitor.

In the library proper there are eight rooms, including the rotunda, used as follows:—Men's reading room, ladies' reading room, ladies' lavatory, reference room, catalogue room, stack room and librarian's office.

In the basement there are eight rooms as follows:—Men's reading and smoking room, museum, furnace room, work room, board room, private lavatory, men's lavatory and cataloguing room.

Free access to the books is not permitted.

Age limit: 14.

System of classification and cataloguing: We are at the present time installing the Dewey Decimal System.

Cost of building: Building and furniture complete, $35,250.

System of heating: Hot water.

Defects in present building.

1st. The approach to the front entrance of the building is reached by a flight of 24 stone steps. While this makes a very handsome building I think that for the aged and infirm people who patronize the building it would be an improvement if the library proper had been on the ground floor and the entrance a little above the level of the sidewalk.

2nd. Our reading rooms are isolated, each room being independent of the rest of the building. It can easily be seen that with a limited staff the one room library is much preferable.

3rd. No means were provided for taking out coal ashes, refuse, etc., all of which has to be carried out in boxes.

4th. In the heating of the basement the radiators are suspended from the ceiling and has proved most unsatisfactory, so much so that in severe weather the greater part of the basement cannot be used.

Materials used in building: Brick and Terra Cotta.

Size of building: 96 x 77 feet.

Wood used for interior finish: Quarter-cut oak for library proper; grained pine and quarter-cut oak for basement and fittings.

Material used for stacks: Wood.

Provision has been made in original plan for increasing capacity of stack room.

Cost of building and furnishings: $35,250.

Gifts from Mr. Carnegie: $35,000.

Brockville Public Library.

Library completed: July 1st, 1904.

Library opened: August 13th, 1904.

Material used in building: Pressed red brick, grey stone with slate roof.

Size of building: 61 x 65.

The Basement:—

- Lecture hall: 27 x 47.
- Ash room: 5 x 10.
- Boiler room: 10 x 16.
- Coal room: 5 x 14.
- Receiving room: 7-6 x 34.
- Store room: 12 x 18.
- Ladies' toilet room: 6 x 12.
- Gentlemen's toilet room.

First Flat:—

- General reading room: 26 x 28.
- Reference room: 17 x 26.
- Stack room: 26 x 28.
- Librarian's room: 10 x 17.
- Toilet room: 6 x 8.

Entering the building at the main (corner) door on the ground floor the corridor is 8 x 20. The corridor where the books are distributed is 8 x 28; the corridor at the side entrance is 10 x 10.

The height of the ceilings are: For ground floor, 18 ft., and for basement, 10 ft.

System of heating: Hot water.

Material used in stacks: Steel.

Height of stacks: 7 feet, 6 inches.

Material used in finishing building: Quarter-cut oak.

Material used in furniture: Quarter-cut oak.

Provision has been made for increasing capacity of stack room.

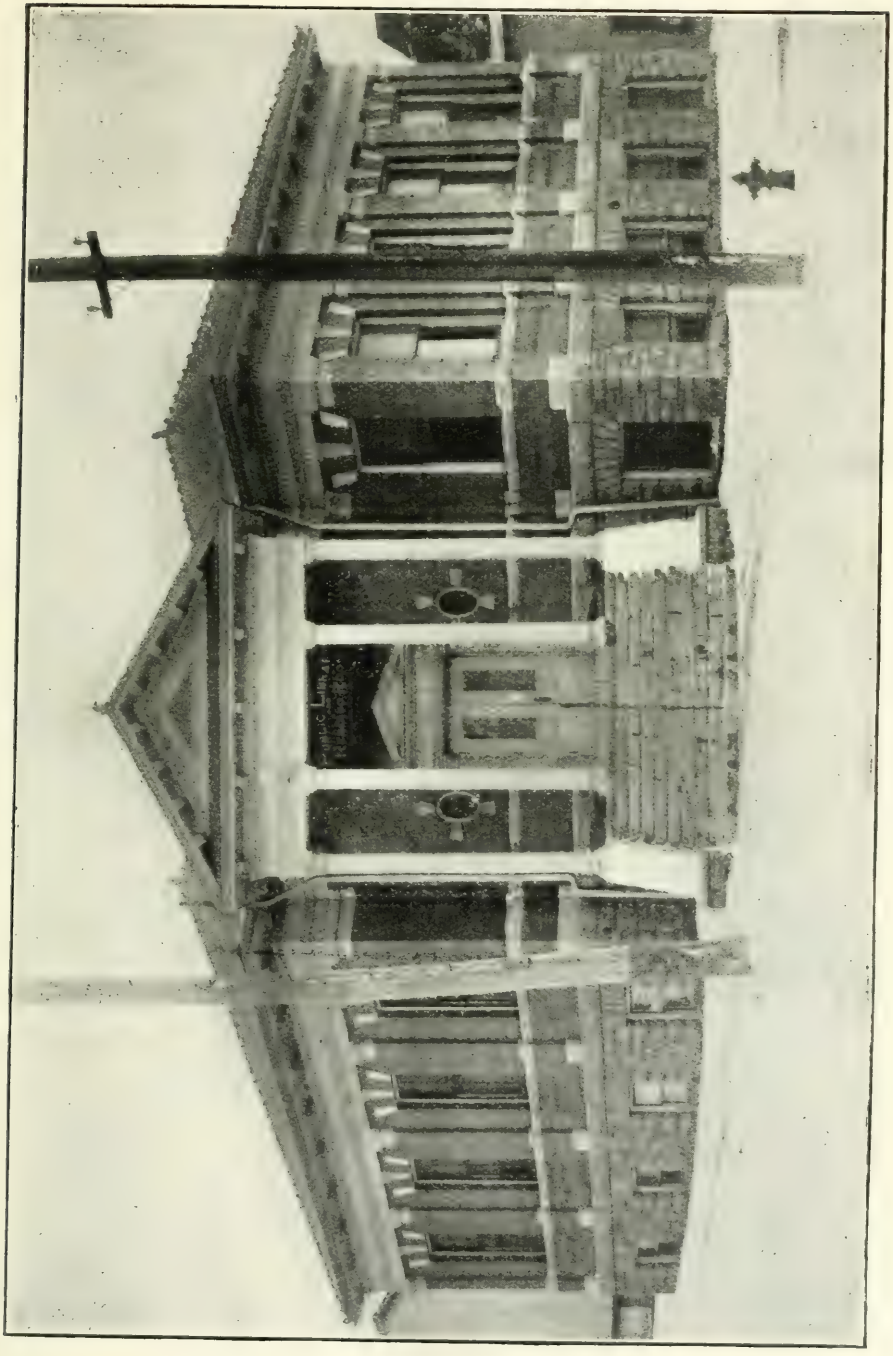
Cost of building, exclusive of lot: $15,447.

Cost of furnishing: $1,698.

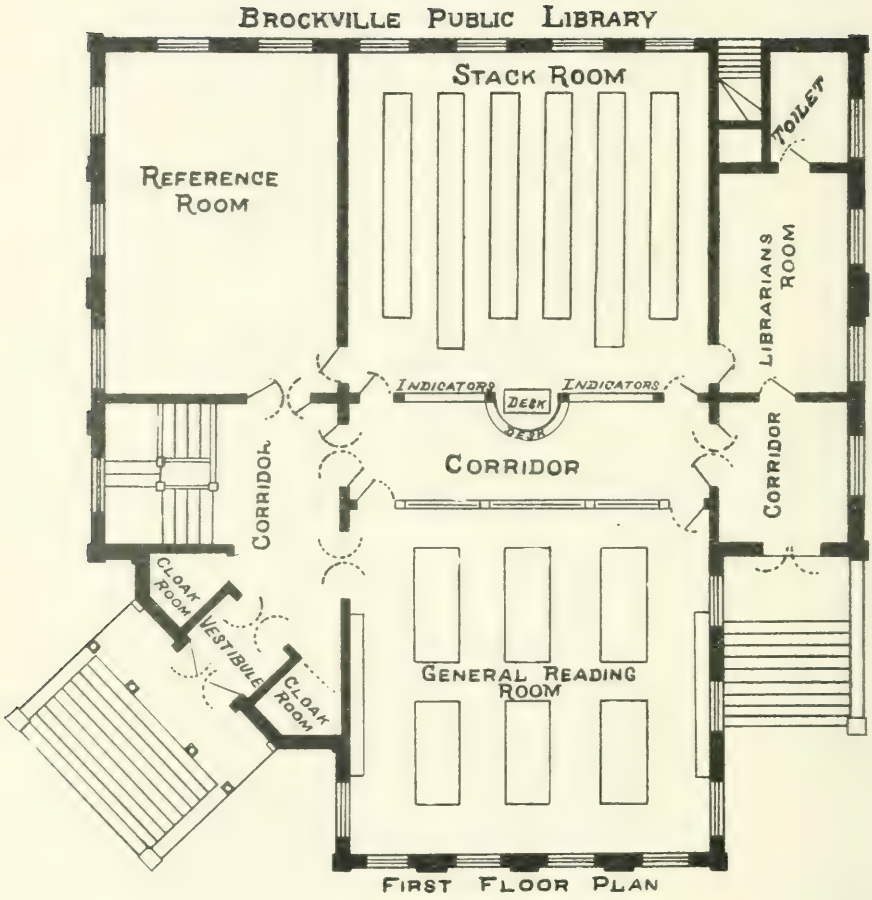
Gift from Mr. Carnegie: $17,000.

Names of persons on Library Board when Library was opened:

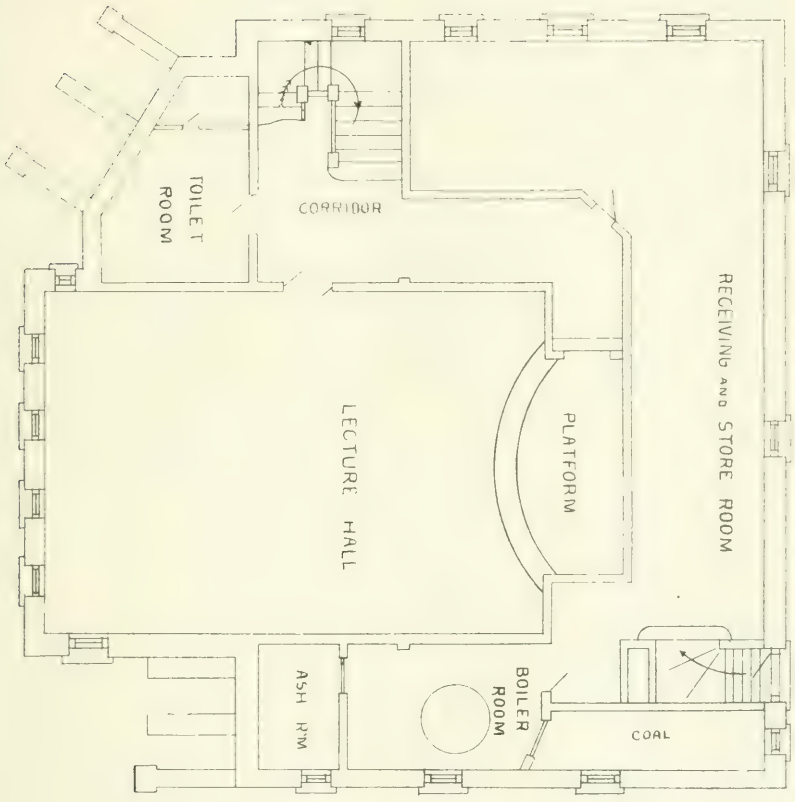
Rev. H. H. Bedford Jones, R. H. Lindsay, Judge H. S. McDonald, Dr. A. J. Macaulay, Albert Abbott, Robert Laidlaw, W. C. MacLaren, E. A. Geiger, Mayor S. J. Geash.



Brockville Public Library.


BROCKVILLE PUBLIC LIBRARY
STACK ROOM
TOILET
REFERENCE ROOM
LIBRARIANS ROOM
INDICATORS
DESK
INDICATORS
DESK
CORRIDOR
CORRIDOR
CORRIDOR
CLOAK ROOM
VESTIBULE
CLOAK ROOM
GENERAL READING ROOM
FIRST FLOOR PLAN

BROCKVILLE PUBLIC LIBRARY

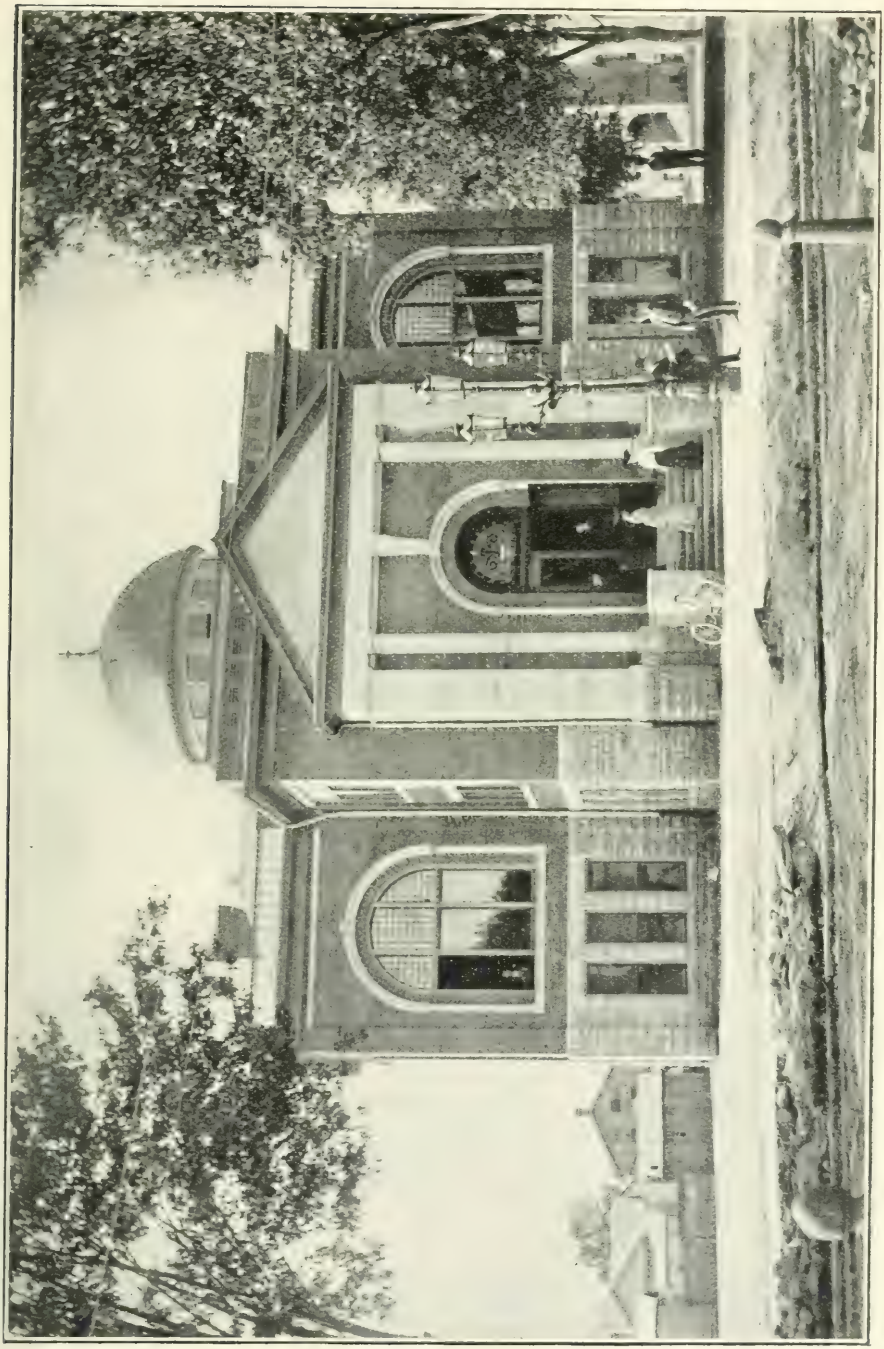


BASEMENT PLAN

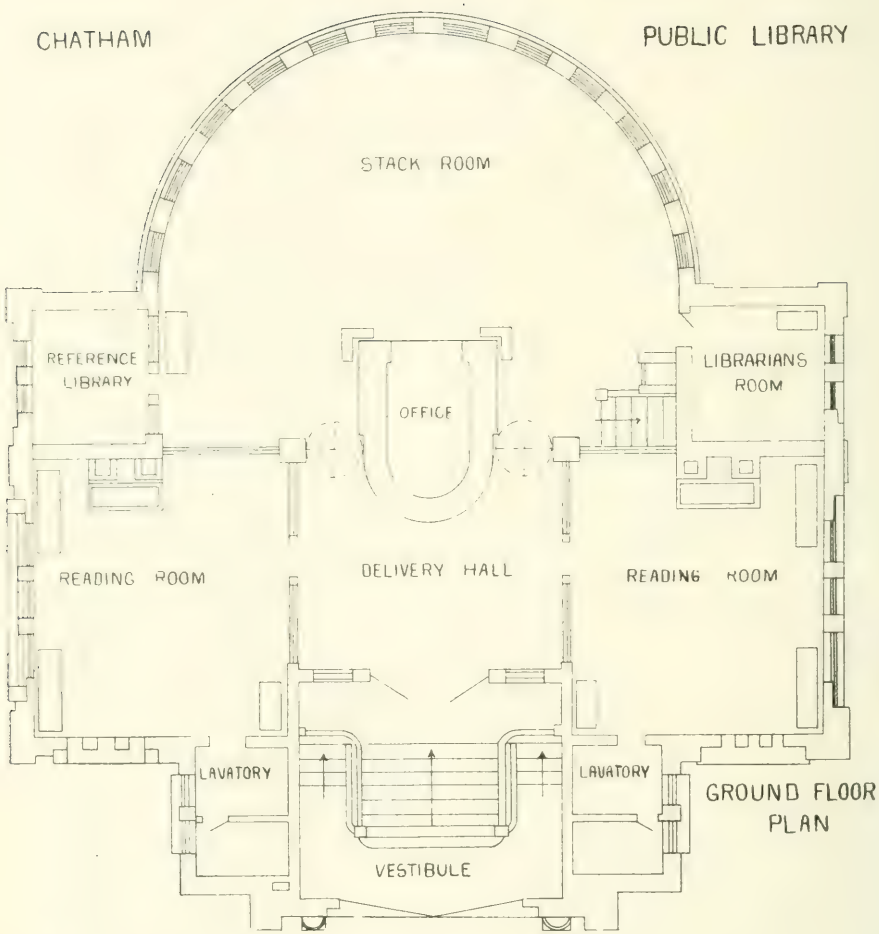
Names of official staff at time of opening:
Miss Carrie A. Rowe, Librarian.
Miss Minnie A. Rowe, Assistant Librarian.
E. A. Geiger, Sec.-Treas.
Free access is not permitted to books except in Reference Library.
Age limit: 14 years.
Printed catalogue: Card catalogue for librarian only.
Defects:—
The roof is a trifle too flat for the Canadian winter. A door from the basement to the street should have been provided.

Chatham Public Library.

Library completed: September, 1903.
Library opened: September 14th, 1903.
Materials used in building: First story, stone in coursed ashlar; second story, pressed brick.
Size of building: 60 x 60.
Basement:—
Assembly hall: 40 x 33.
Library Board room: 12 x 16.
Fuel room: 10-6 x 11-4.
Unpacking room: 10-6 x 11-4.
Boiler room: 16-8 x 25-4.
Newspaper Reading room: 16-8 x 25-4.
Two Store rooms: 5-6 x 11.
First Floor:—
Stack room: 40 x 32.
Reference Library: 10-8 x 11-6.
Librarian's room: 10-8 x 11-6.
Men's Reading room: 23-6 x 25-6.
Ladies' Reading room: 23-6 x 25-6.
Delivery hall: 17 x 21-8.
Lavatory: 6-4 x 11-4.
Lavatory: 6-4 x 11-4.
Wood used in finishing basement: Georgia pine.
Wood used in finishing first floor: Red oak.
Wood used in fittings: Quarter-cut oak.
Material used in stacks: Metal.
Height of stacks: 7 ft. 6 in.
Provision has been made for doubling the capacity of stack room.
Cost of building, exclusive of site: $16,852.39.
Cost of furnishings: $2,147.61.
System of heating: Steam.
Gifts from Mr. Carnegie: $19,000.00.
On January 18th, 1902, Mr. Albert Sheldrick, a member of the Library Board, wrote Mr. Carnegie, asking for a donation for a new library building. The request was complied with on the usual terms.
Members of Library Board when Library was opened:—
Dr. Charteris, Chairman; S. M. Smith, J. W. Humphrey, A. Sheldrick, F. Stone, I. L. Davis, J. U. Thibodeau, W. J. Twohey.
Names of the official staff:—
Dr. Charteris, Chairman; I. L. Davis, Secretary; A. Sheldrick, Treasurer; Mrs. Robinson, Librarian; Miss Edith Barassin, Assistant Librarian.



Chatham Public Library.

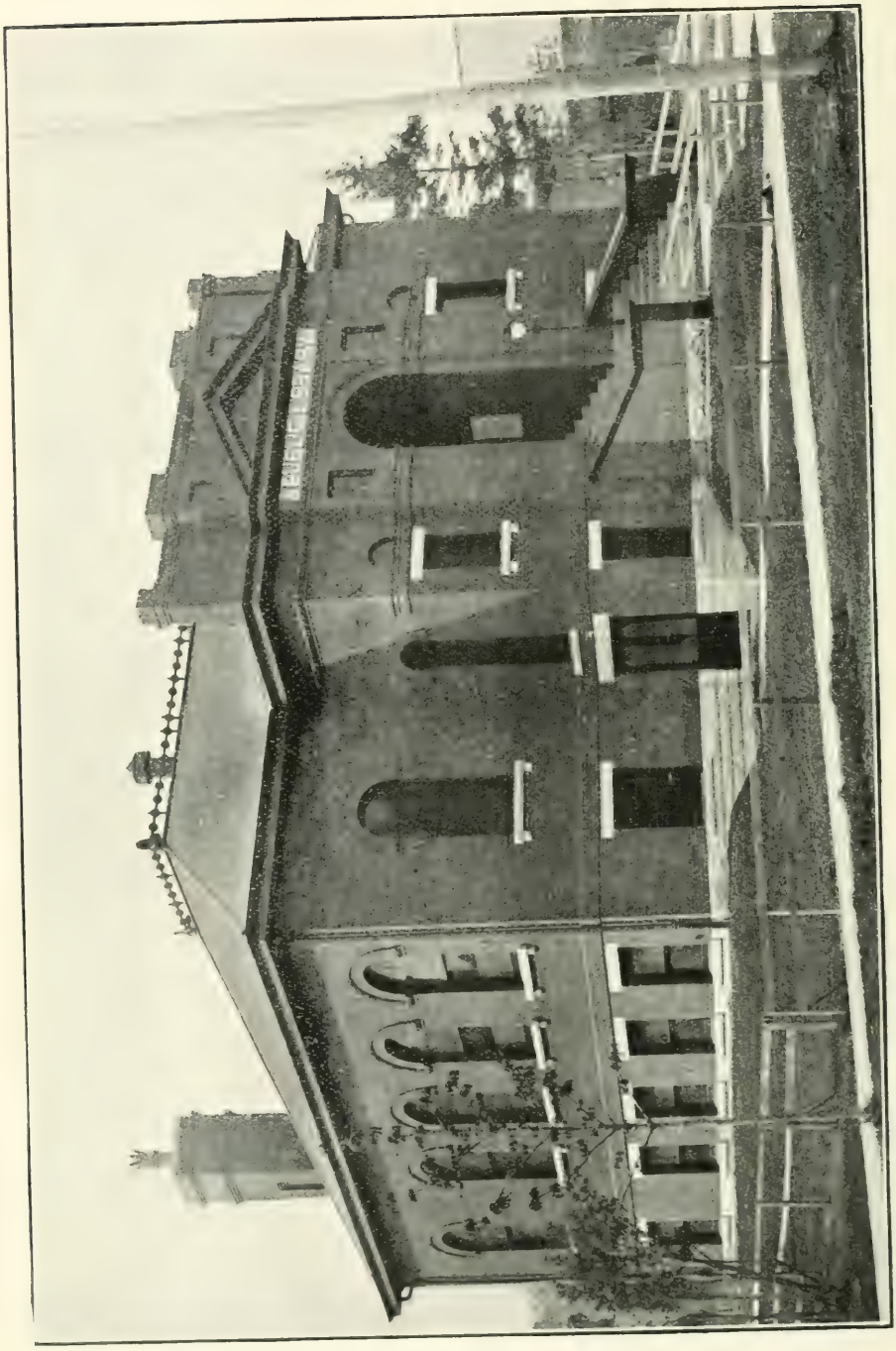

CHATHAM
PUBLIC LIBRARY
STACK ROOM
REFERENCE LIBRARY
OFFICE
LIBRARIANS ROOM
READING ROOM
DELIVERY HALL
READING ROOM
LAVATORY
LAVATORY
VESTIBULE
GROUND FLOOR PLAN

17a ED.

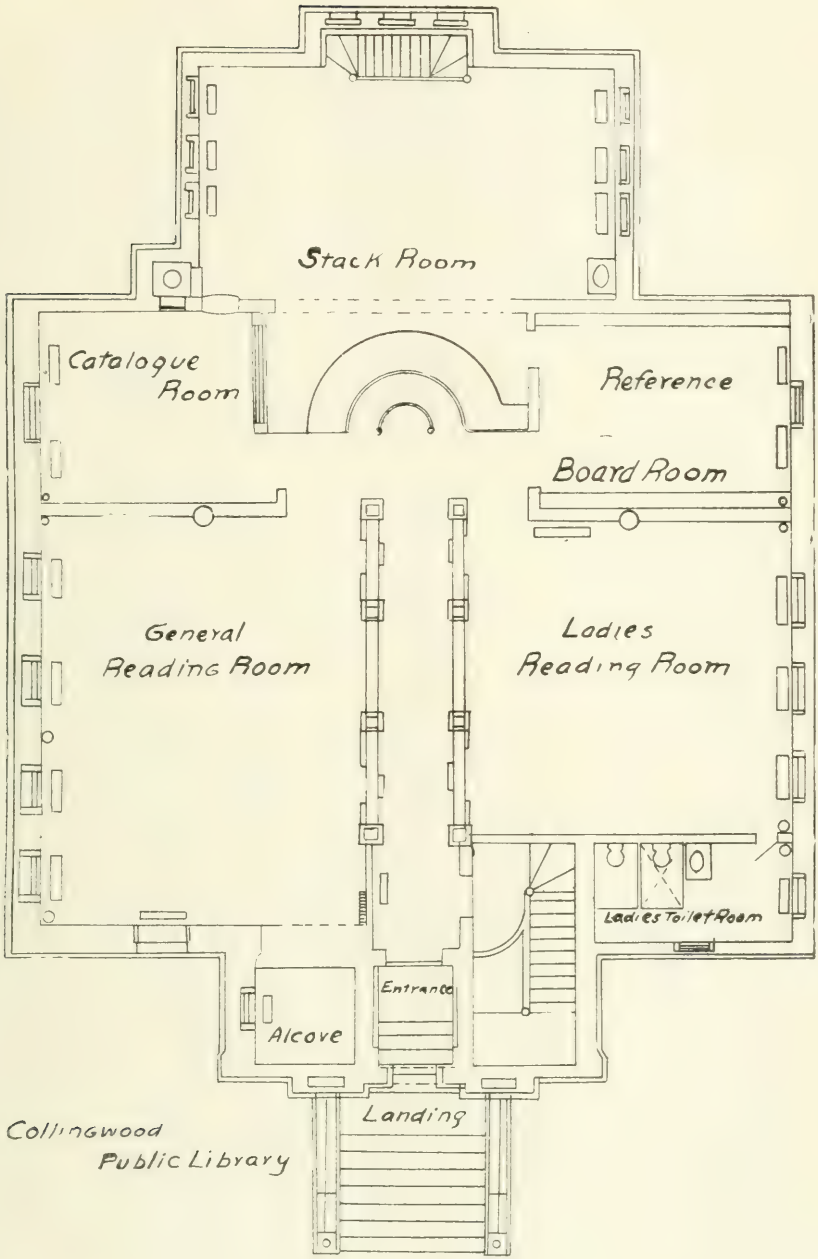
Free access is permitted to the books.
No age limit.
Dewey decimal system of classification.
Card catalogue in use.

Collingwood Public Library.

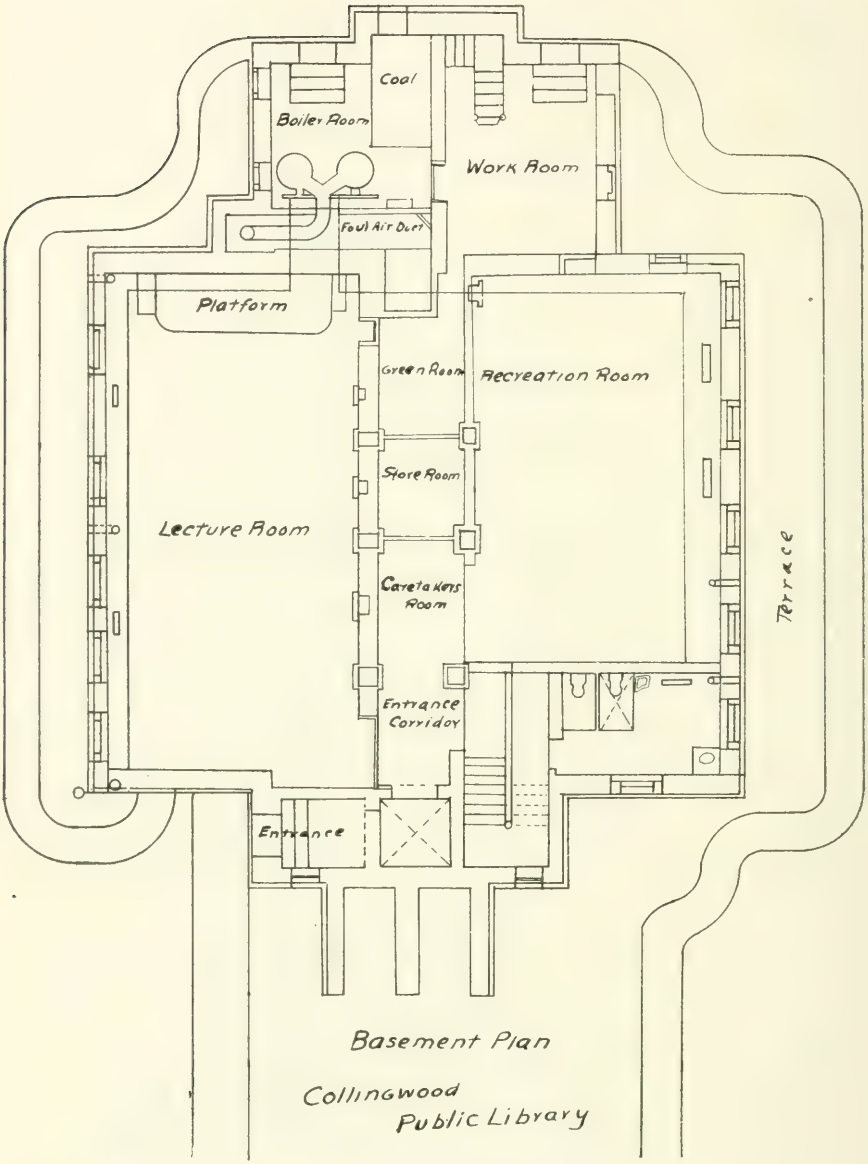
Material used in building: Pressed brick.
Size of building:—
Main building: 49 x 55.
Stack room: 18 x 32-6.
Height of walls: 21-6.
Basement:—
Lobby and entrance: 7 x 31.
East room: 22-8 x 46-10. Used by Huron Institute.
West room: 22-8 x 37-4. Not in use at present.
Furnace room: 14 x 12-6.
Work room: 14 x 15.
Corridor: 7 x 48. Divided into small store rooms.
Men's lavatory: 8-6 x 12-6.
Main floor:—
Corridor: 7 x 33.
Rotunda: 20 x 13.
General reading room: 23-8 x 32-6.
Ladies' reading room: 23-8 x 24.
Stack room: 32-6 x 17.
Catalogue room: 17-2 x 14.
Board room: 17-2 x 14.
Ladies' lavatory: 8-6 x 14-6.
Wood used for interior finish: Oak. Floors maple and pine.
Wood used for fittings: Oak.
Material used for stacks: Oak (pine shelves).
Height of stacks: About 8 feet.
Provision made to double capacity of stacks.
Cost of building, exclusive of lot: $14,500.
The lot was donated by Mr. Thomas Long, and Mr. John J. Long.
Cost of furnishings: About $2,000.
Heating system: Hot water.
Heating satisfactory.
Gifts from Mr. Carnegie: $14,500.
Members of the Library Board when Library was opened:—
Henry Robertson, K.C., Chairman; E. R. Carpenter, Chairman of Library Committee; F. W. Churchill, Chairman of Finance Committee; W. A. Hogg, D. Wilson, Mayor; M. P. Byrnes, F. B. Gregory, Secretary-Treasurer.
Official Staff:—
Miss Ella Hilborn, Librarian.
N. B. Hilborn, Assistant Librarian.
Free access is allowed to the books in the afternoon, but not in the evening.
Age limit: Twelve years.
A printed catalogue is used.



The Collingwood Public Library



Ground Floor Plan


Coal
Boiler Room
Work Room
Foul Air Duct
Platform
Green Room
Recreation Room
Store Room
Lecture Room
Caretakers Room
Terrace
Entrance Corridor
Entrance
Basement Plan
Collingwood
Public Library

Cornwall Public Library.

The Secretary of the Library Board was instructed to write Mr. Carnegie soliciting a donation towards the erection of a Public Library Building in Cornwall.

Mr. Carnegie in reply expressed himself as willing to agree to the request on the condition that the town would grant an annual sum for the maintenance, and that he would give a sum equal to ten times the annual grant by the town.

The Library Board consulted with the town council and together agreed upon the sum of $700.00 as an annual grant for maintenance. The statement was forwarded to Mr. Carnegie, and being accepted, a grant of $7,000 was made.

Steps were taken to secure plans, etc., tenders were called for and the contract awarded. The plans were submitted to Mr. Carnegie, and being accepted, the $7,000 was paid as the work progressed.

The first Board consisted of:—

Dr. D. O. Alquire, Mayor of Cornwall.
P. E. Campbell, President.
J. E. Macdonald, Secretary.
J. C. Milligen, Treasurer.
W. Gibbens, J. A. Chisholm, Dr. Maloney, J. Skelton and S. J. Keys, B.A.

First Flat:—

Reading room, 13 x 30.
Reading room, 15 x 18.
Hall, 9 x 15.
Board room, 15 x 12.
Stack room, 14 x 40.

Basement:—

2—(14 x 40), (30 x 40).

Size of library building, 36 x 48.
Wood used in finishing building. White.
Wood used in fittings: White.
Public not admitted to stack room.
Age limit, 12 years.
Building cost exclusive of site, $6,000.
System of heating. Hot water.
Defect in construction. The Librarian has not full view of the reading rooms when at delivery desk.

The Galt Public Library.

At the request of the Board, on March 10th, 1902, Mr. James E. Kerr wrote to Mr. Carnegie asking for a grant for a Public Library. In reply to the request and also to a similar letter written by Mr. R. Alexander, Mr. Carnegie promised a grant of $17,500.

The Town Council of Galt, May 5th, formally accepted Mr. Carnegie's offer. A committee was appointed to select a site and a by-law passed authorizing the purchase of the site chosen. Plans were prepared by Mr. Mellish, Architect, and tenders secured for the erection of the library building.

The first Library Board (after completion of the building):—

Chairman, R. Alexander.
Treasurer, E. Radigan.
Secretary, James E. Kerr.

Other members of the Board.

Charles Turnbull.
William Wallace.
John H. McGregor.
Alexander Sloan.
Louis Lang.
Mark Mundy, Mayor of Galt.

Library staff:—

Miss A. G. Millard, Librarian.
Miss L. Henderson, Assistant Librarian.

Divisions of Library building:—

Basement:—

Mens' smoking and reading room, 21 x 27.
Cataloguing room, 18 x 21.
Store room, 18 x 21.
Boiler room, 13 x 27.
Hall, 16 x 49.
Height of ceilings, 9 ft. 6 in.

First floor:—

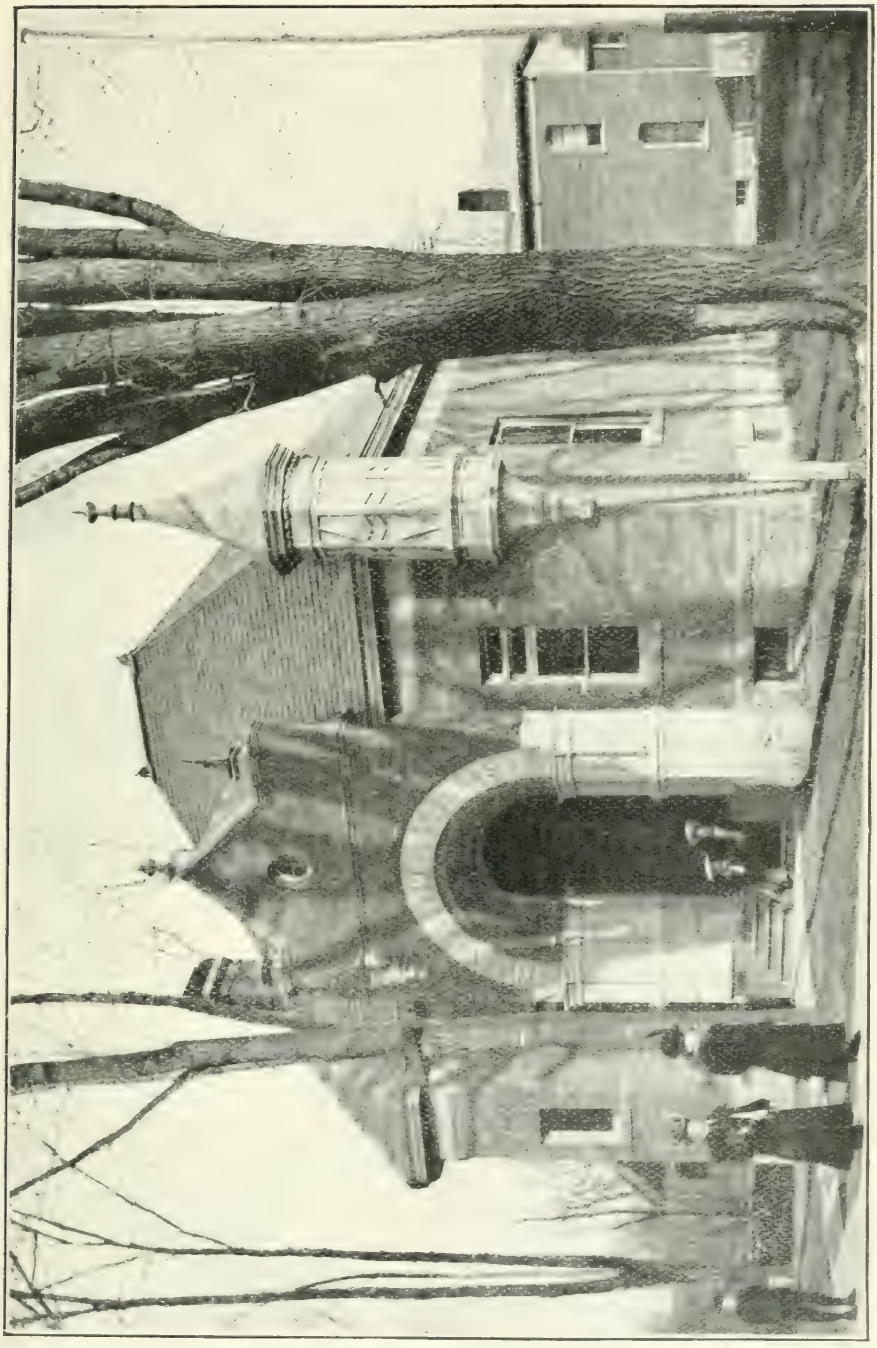
Stack room, 22 x 46.
Reading room, 28 x 48.
Delivery room, 16 x 24.
Reference room, 14 x 16.
Librarian's room, 10-6 x 11.
Height of ceilings, 16 ft.

Second floor:—

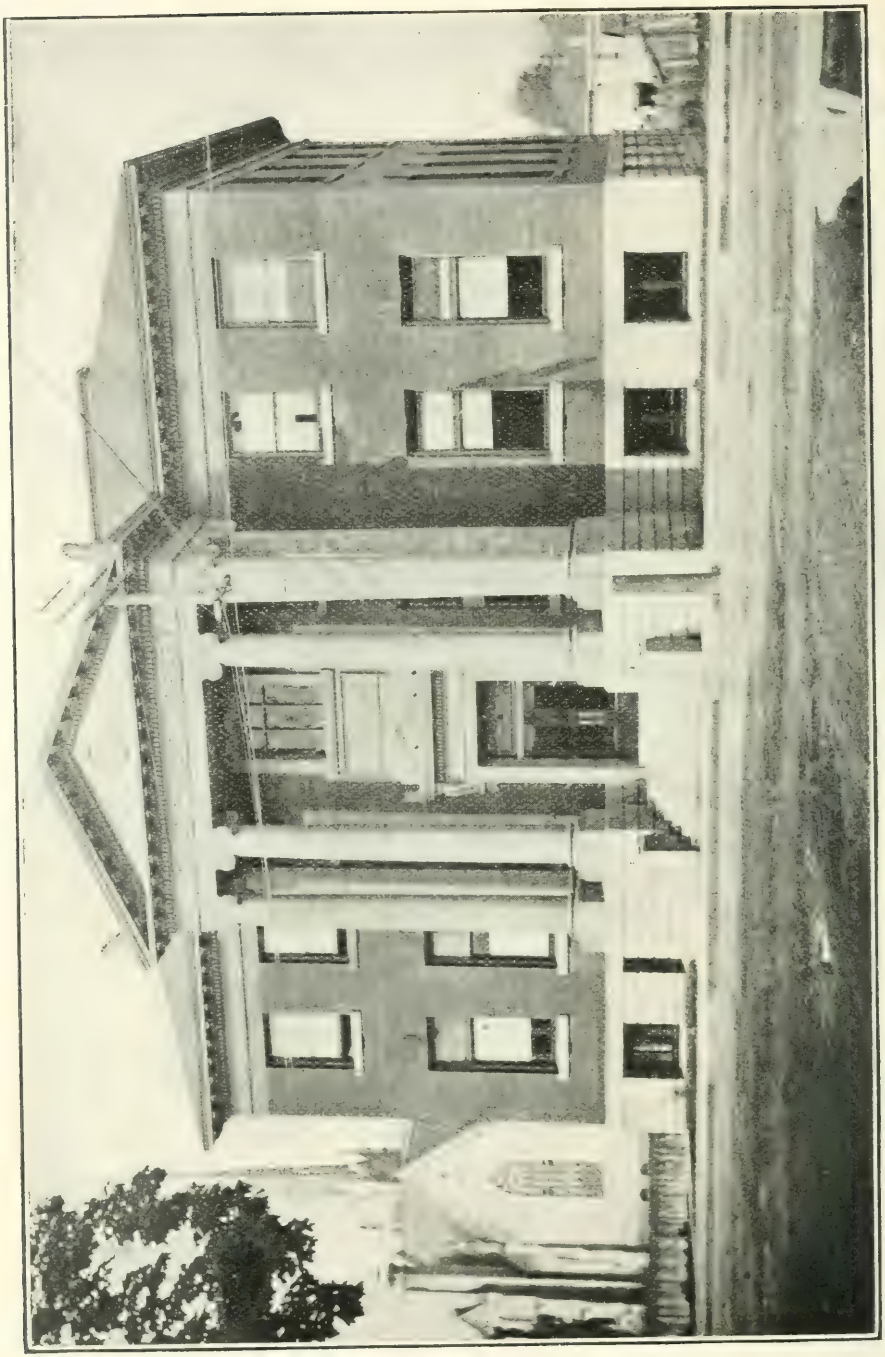
Lecture room, 28 x 48.
Class room, 22 x 46.
Board room, 14 x 16.
Hall, 16 x 31.
Height of ceilings, 14 ft.

Library completed, August, 1905.
Library opened August 8th, 1905.
Materials used in building: Brick and Portland cement.
Size of building: 47 x 68, inside measurement.
Wood used for interior finish: Oak.
Wood used for fittings: Oak.
Material used for book stacks: Oak.
Height of stacks: 7 ft. 6 in.
Width of stacks: 20 inches.
Provision has been made for increasing the capacity of stack room.
Cost of building, exclusive of lot: $22,000.
Cost of furnishing: $2,000.
System of heating: Low pressure steam.
No defects in heating system.
Gifts from Mr. Carnegie: $23,000.

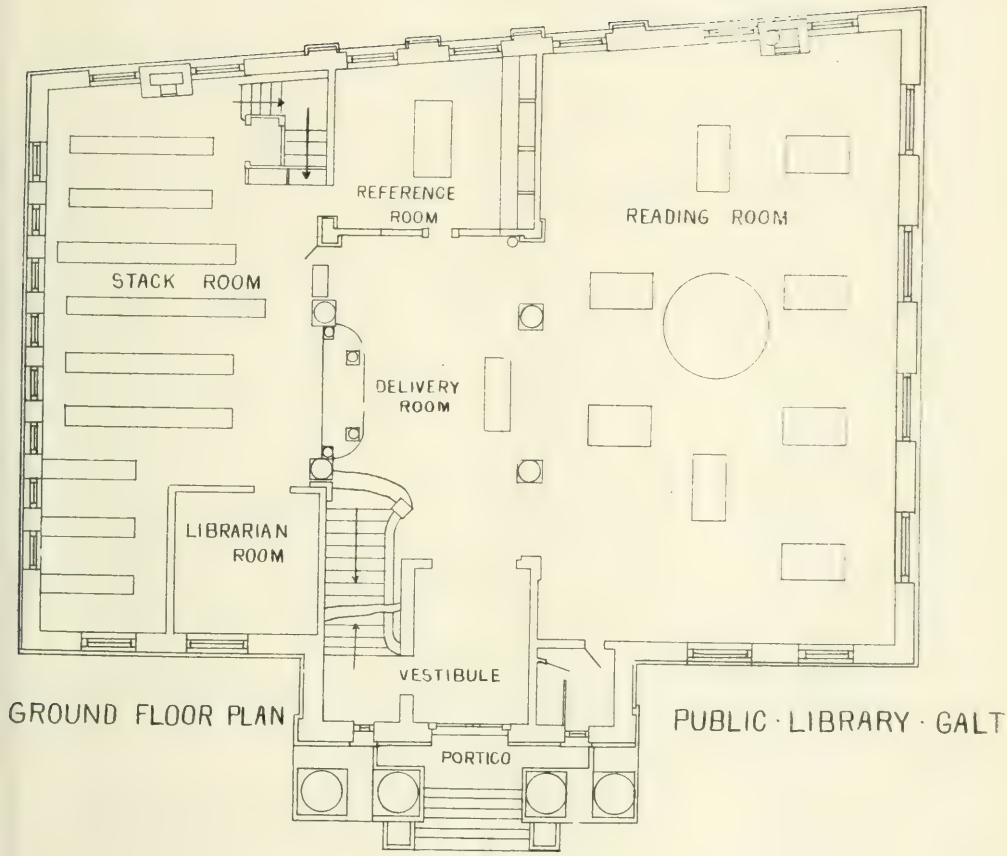
During the winter a Literary Society holds its meetings in one of the rooms of the library. A course of public lectures is also held in the lecture room.

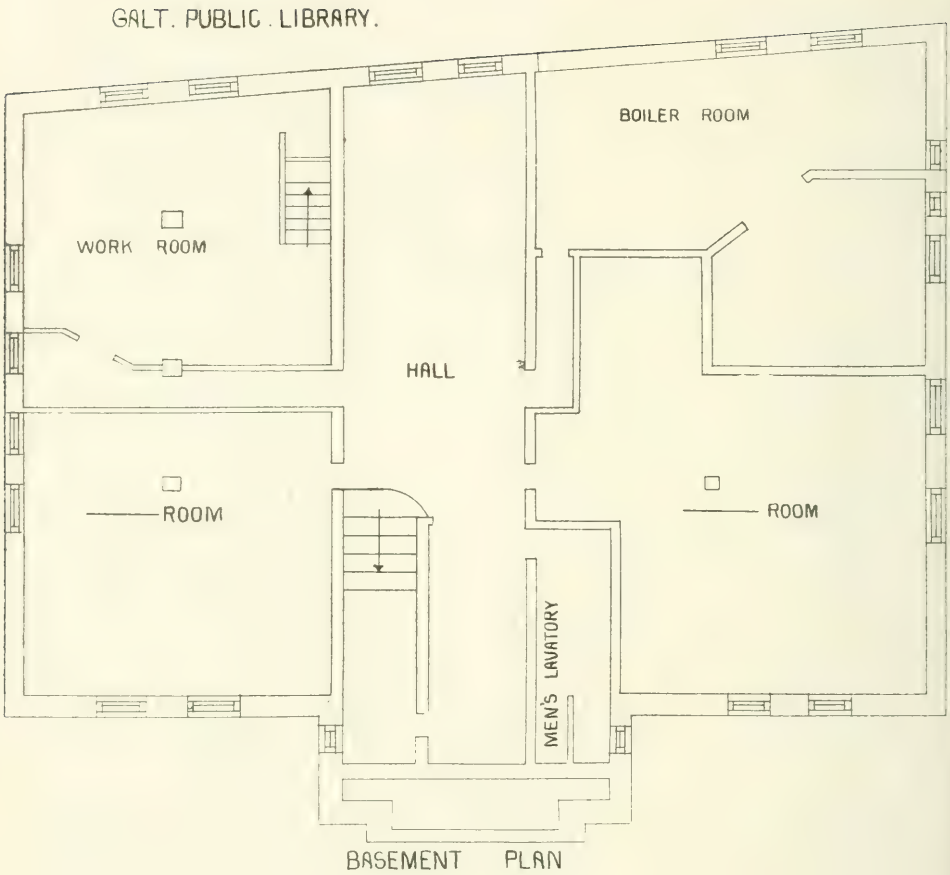


The Cornwall Public Library

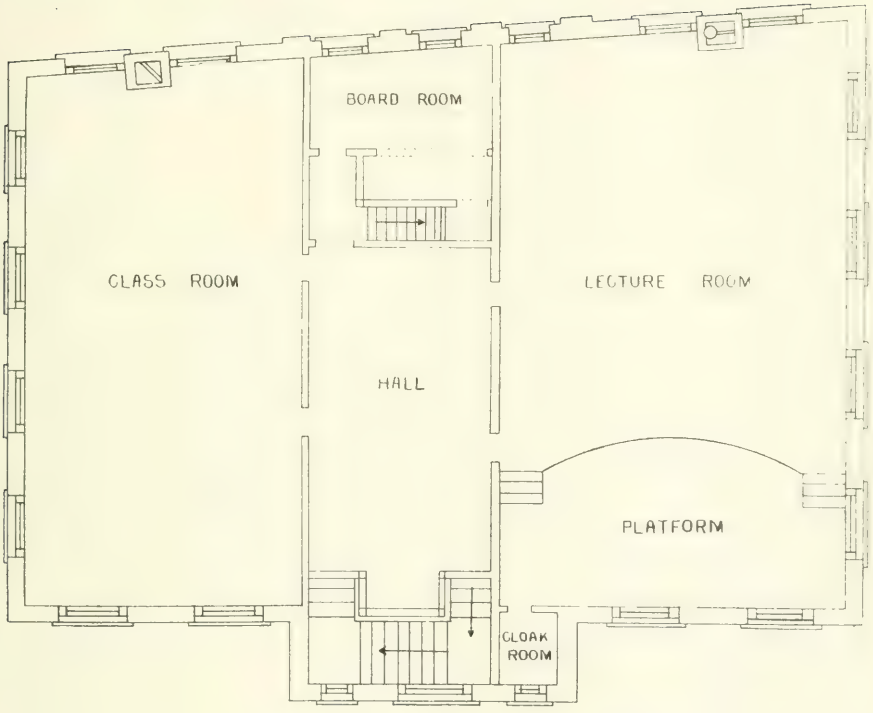


Galt Public Library


REFERENCE ROOM
READING ROOM
STACK ROOM
DELIVERY ROOM
LIBRARIAN ROOM
VESTIBULE
PORTICO
GROUND FLOOR PLAN
PUBLIC · LIBRARY · GALT


GALT. PUBLIC. LIBRARY.
BOILER ROOM
WORK ROOM
HALL
ROOM
ROOM
MEN'S LAVATORY
BASEMENT PLAN

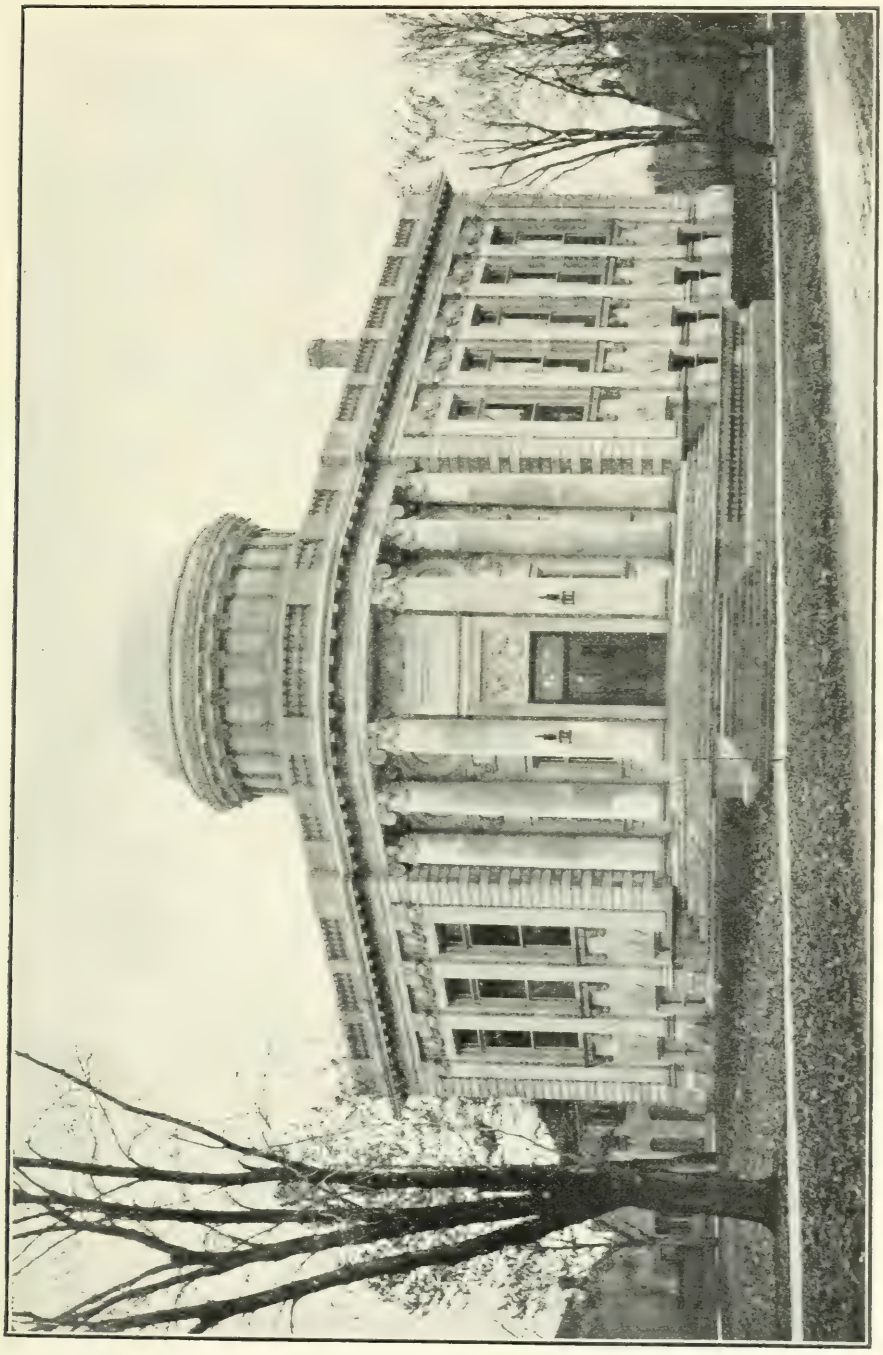
GALT. PUBLIC LIBRARY.



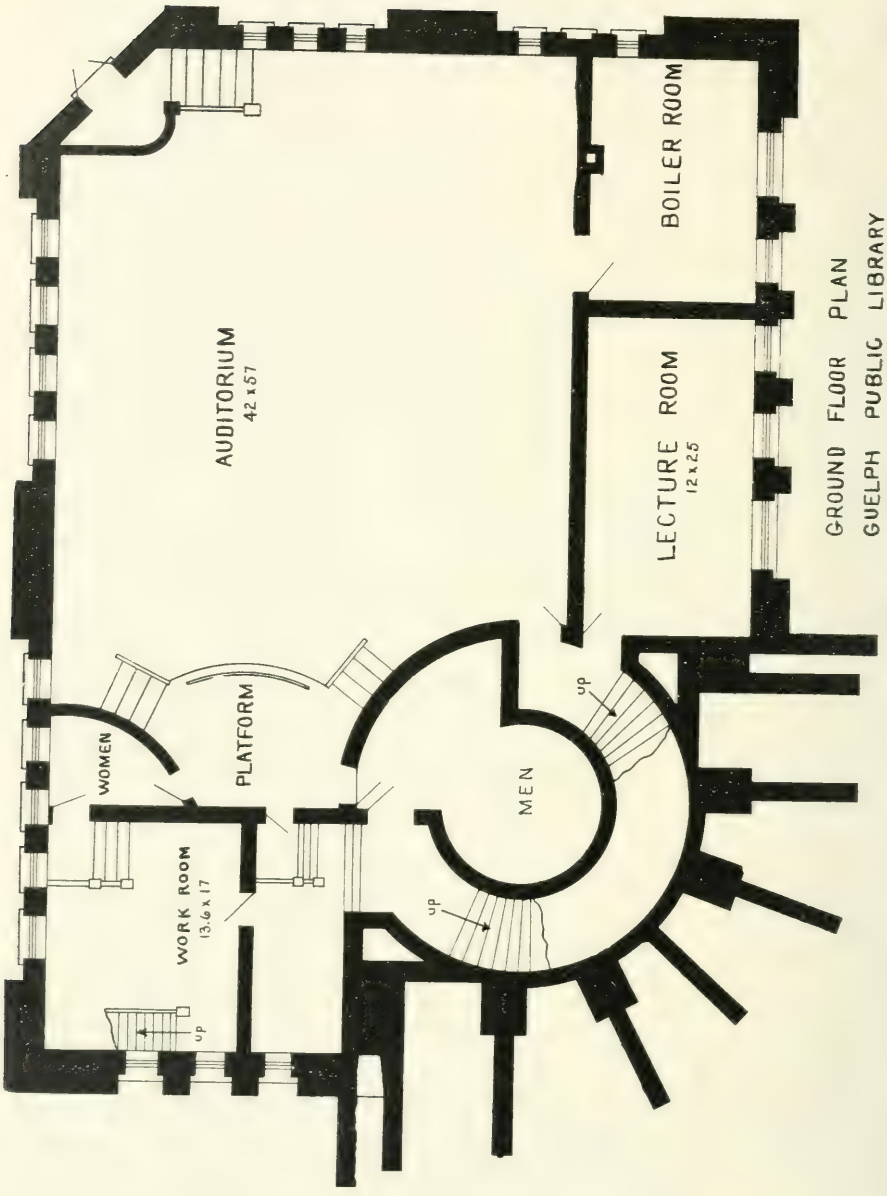
SECOND FLOOR PLAN

GUELPH PUBLIC LIBRARY.

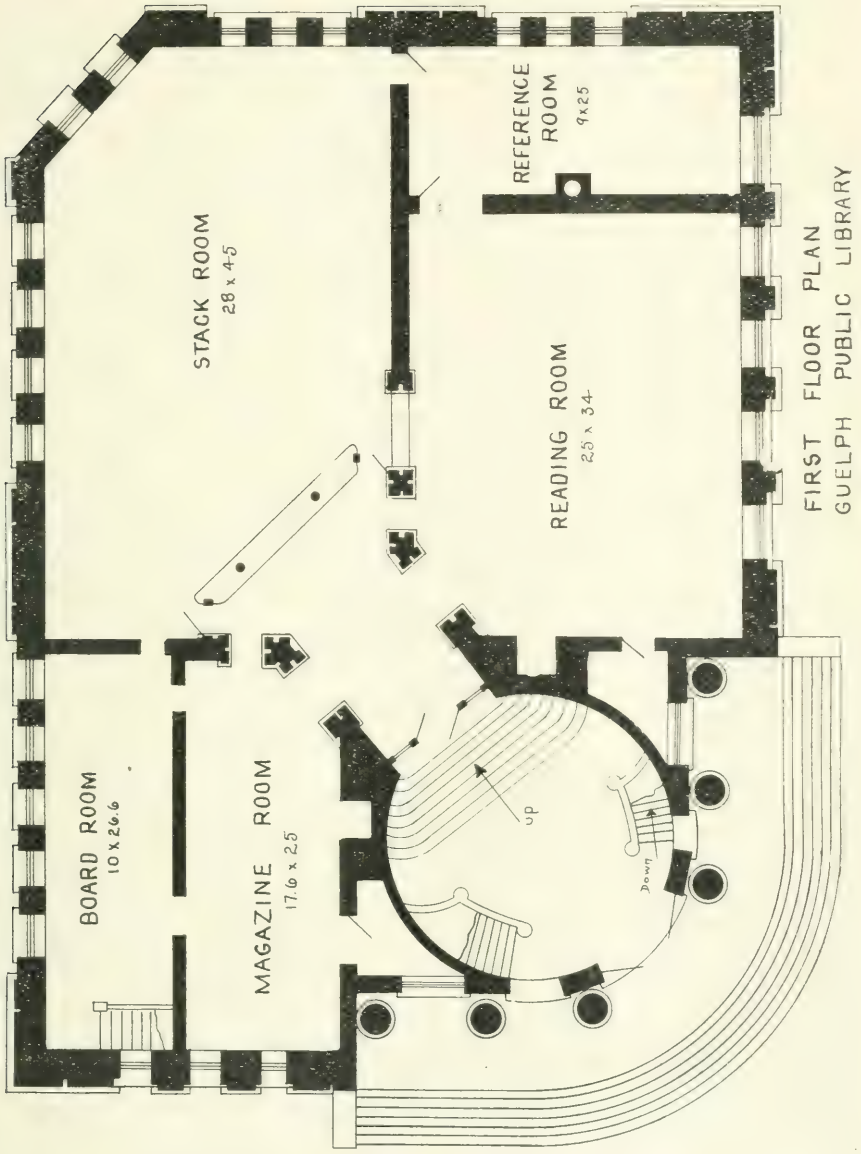
Library completed: September, 1905.
Library opened: September 29th, 1905.
Material used in building: Artificial stone.
Size of building: 56 x 75.
Basement:—
Auditorium, 42 x 57.
Lecture room, 12 x 15.
Work room, 13-6 x 17.
Sitting room, 10 x 12.
Furnace room, 12 x 18.
Gentlemen's dressing room, 8 x 11
Ladies' dressing room, 12 x 18.
First floor:—
Stack room, 28 x 45.
Reference room, 9 x 25.
Board room, 10 x 26.
General reading room, 25 x 34.
Ladies' reading room, 18 x 25.
Wood used for interior finish: Oak.
Wood used for finish of basement: Georgia pine.
Wood used for fittings: Oak.
Material used for stacks: Oak.
Height of stacks: 7 ft. 6 in.
Provision made for enlarging apacity of stack room.
Cost of building, exclusive of site: $20,000.
Cost of furnishings: $4,000.
System of heating: Hot water.
Heating satisfactory.
Gifts from Mr. Carnegie: $24,000.
How gift was secured from Mr. Carnegie: Mr. James Watt communited with Mr. Carnegie. The grant was made on the usual terms.
Names of persons on Library Board when Library was opened:—
James Watt, E. L. Hill, W. Tytler, B.A., James E. Day, David McCrae, Samuel Terrell, F. T. Coglen, D.D.S., William Weir, Mayor, Sleeman.
Names of official staff at time of opening:—
James Watt, Chairman.
E. L. Hill, B.A., Secretary.
William Tytler, B.A., Chairman Book Committee.
Miss E. M. Davies, Librarian.
Miss A. Harris, Assistant Librarian.
Free access is permitted to the books.
Age limit, 14 years for book borrowers.
Systems of classification:—
Dewey decimal.
Cutter system for fiction.
Card catalogue in use.
Special work for children. Two large tables provided with bound volumes of illustrated periodicals are placed in the general reading room for the use of children.
No defects in the building have been discovered which should be be avoided.



The Guelph Public Library



GROUND FLOOR PLAN
GUELPH PUBLIC LIBRARY



FIRST FLOOR PLAN
GUELPH PUBLIC LIBRARY

Hamilton Public Library.

Library completed September 29th, 1890. Opened on same date.
Materials used in building: Brick, stone, iron, slate.
Size of building: 62-3 x 114-10.
Rooms on each flat:—
Basement, 6 rooms.
First flat, 3 rooms.
Second flat, 4 rooms, hall, lavatory.
Third flat, 7 rooms and 2 halls.
Basement: size and use of each room:—
Two rooms used by Fire Underwriters for offices, 17-6 x 24-4, 19-6 x 24-4.
Bank of Hamilton for stationery, 35 x 59.
Hamilton Association, 1 room, 10 x 24-6.
Boiler room, 23-7 x 57-4.
Store room and lavatory, 24-7 x 57-6.
First floor:—
Reading room and book room, 59-4 x 57.
Stack room, 33-3 x 58-3½.
Board room, 14-4 x 18-9.
Second flat:—
Hamliton Association, 1 room for museum, 28 x 43.
Hamilton Art School: Office, 12 x 20-6; Class room, 21-4 x 25-3; Class room, 24-10 x 28-8; Class room, 28 x 43; Hall and lavatory.
Third floor:—
4 Class rooms, 16 x 16; 15 x 18; 11 x 20; 19 x 25.
3 Store rooms, 15 x 18; 8 x 9; 13 x 8; 2 halls.
Wood used for interior finish: Ash and pine.
Wood used for fittings: Pine.
Height of stacks: 7 ft. 8 in.
No provision has been made for increasing capacity of stack room.
Cost of building, exclusive of site, $35,350.20.
Cost of furnishings, $4,319.80.
System of heating: Steam.
No defects in heating.
Names of persons comprising Library Board when Library was opened: J. E. O'Reilly, Chairman; D. McLellan (Mayor of City); Rev. Samuel Lyle, D.D.; A. Rutherford, F. Walter, F. W. Fearman, W. F. Burton, G. Lynch Staunton, C. Layden.
Official staff at time of opening:—
R. T. Lancefield, Librarian.
Miss A. Stewart, Miss M. Hamilton, Mrs. J. Sutherland, Miss J. Donald.
Free access is permitted to all books except fiction.
Age limit, 14 years.
System of classification and catalogue: Dewey decimal.
Use card catalogue and also print lists of new books each month for free distribution.
Special work: Giving application cards to manufacturers for their employees; the lists of books relating to subjects relating to their line of manufacture.

The Hamilton Public Library

Lindsay Public Library.

Established 1879.

The new Public Library was opened June 28th, 1904. This represents an expenditure of $13,500, the gift of Mr. Carnegie. The site on the Market Park was town property. It is in the centre of a neat expanse of green sward.

Mr. E. A. Hardy, B.A., the then Secretary, communicated with Mr. Carnegie asking for a grant. Mr. Carnegie's Secretary replied June 23rd, 1902, stating that $10,000 would be given on the usual conditions. The tenders for the building showed a larger sum and Mr. Carnegie increased the gift, making the total $13,500.

The building is of modern Greek architecture and the main part 27 by 55 feet. The stack room is 27 by 55 feet, has a capacity of 20,000 volumes, and is operated on the open access plan—the public allowed free access to the books.

The basement has a ten foot ceiling. The main portion of the building on the ground floor is 14 feet 3 inches high, and the stack room ceiling is 14 feet 6 inches. The rubble stone for the masonry was obtained at Cobo conk, the course ashlar above grade line was obtained at Britnell & Co.'s quarries at Burnt River, and cannot be excelled in appearance and quality. The brickwork is of red stack brick laid with American bond in brown mortar. The window sills, architraves, and quorns and columns are of artificial stone, which add greatly to the appearance of the building. The fireplaces are built of No. 1 red pressed brick. The whole of the carpenter work is of clear pine lumber.

The Basement:—

Lecture room, Historical Society room, Receiving room, Men's lavatory and hall.
Men's reading and smoking room: 23-6 x 16-6.
Historical Society room: 23-6 x 16-6.
Small Closet: 1-6 x 1-3.
Small closet: 1-6 x 1-3.
Men's lavatory: 9 x 8-10.
Store room: 24 x 12.
Vault: 21-3 x 8-6.
Furnace room, 26 x 12-4.
Coal room: 21-10 x 8-9.

First floor:—

Vesitbule: 8 x 6.
Main hall: 20 x 14-9.
Children's reading room: 17-6 x 15-2.
Stack room: 52-6 x 21 (average).
Board room: 17 x 8-6.
Ladies' lavatory: 5 x 5-4.
Closet: 2 x 1-9.
General reading room: 23-9 x 16-9.

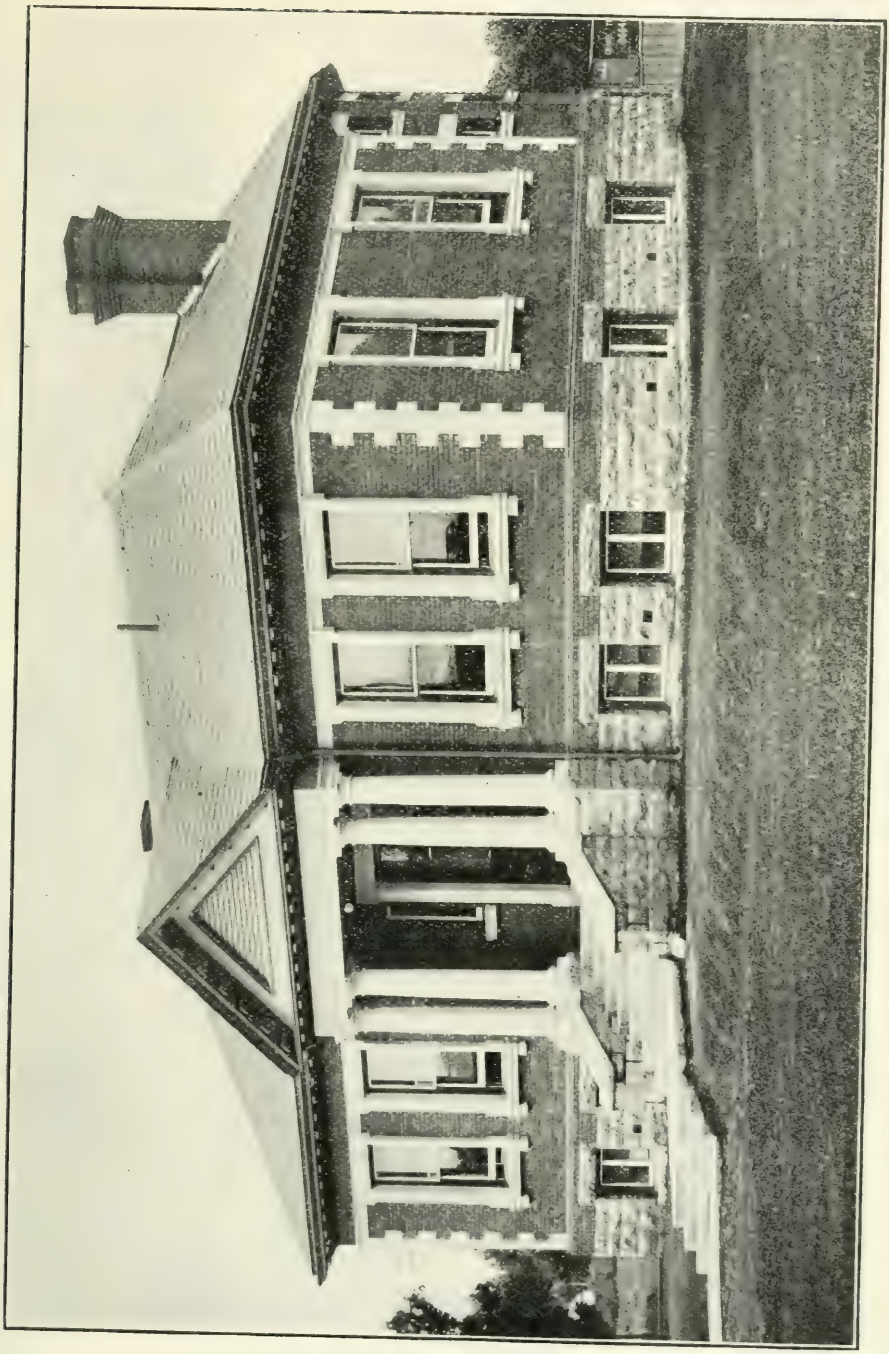
Free access is allowed to books.

There is no age limit.

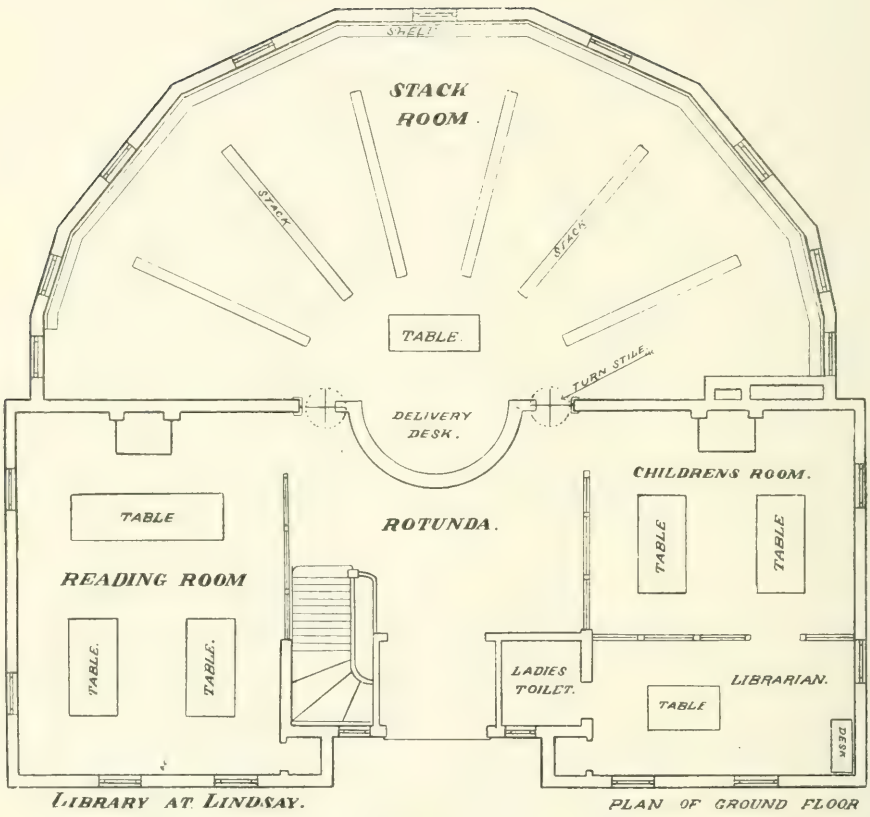
There is no catalogue up to date.

Cost of building including furniture and furnishings about $13,000, exclusive of site.

The system of heating: Steam.



The Lindsay Public Library



LIBRARY AT LINDSAY.

PLAN OF GROUND FLOOR

The following are some defects of the library:—

The basement is too deep in the ground, giving the building a low appearance, as the site is flat, although slightly terraced immediately around the building.

The smoking room is not properly ventilated.

The reading room is not large enough to allow for the growth of the town. This may be overcome somewhat by throwing the present reading room, the main hall and children's room into one general room, extending the width of the building. While complete as at present, the plan does not seem to admit of further enlargement.

The heating apparatus was not of sufficient capacity. This has been partially remedied by the installation of extra radiators.

Materials used in finishing: Ash and quarter cut oak.

Floors in basement: Pine.

Floors in first flat: Maple.

Wood used in furnishings: Quarter cut oak.

Height of stacks, 7 feet.

Three more stacks can be added

London Public Library.

Completed in 1895, enlarged in 1903.

Formally opened Nov. 26, 1895.

Material used: Red pressed brick.

Size of building: See plans.

Rooms:

Basement—Furnace and storerooms, newspaper-file room, assistants' private room.

First Floor—General reading room, ladies' reading room, reference room, stack room, circulating dept., librarian's office and board room, work room.

Second Floor—Historical Society's Museum, Meeting rooms.

Wood used for interior finish: Pine, grained.

Wood used for fittings: Oak.

Material used for book stacks: Oak.

Height of stacks: 8 feet.

Fourteen feet at end of stack room for extending present stacks.

Cost of building—Original, $14,354.54; 1903, extension, $5,511.50.

Cost of furnishings—Original, $1,676.16; 1903, extension, $403.83.

Heating: Reading room, reference rooms, museum, with hot air. Circulating dept., stack room, office, work room—hot water.

Assistant's room, work room poorly heated.

Have had no gifts from Mr. Carnegie.

No steps have been or will be taken to secure any.

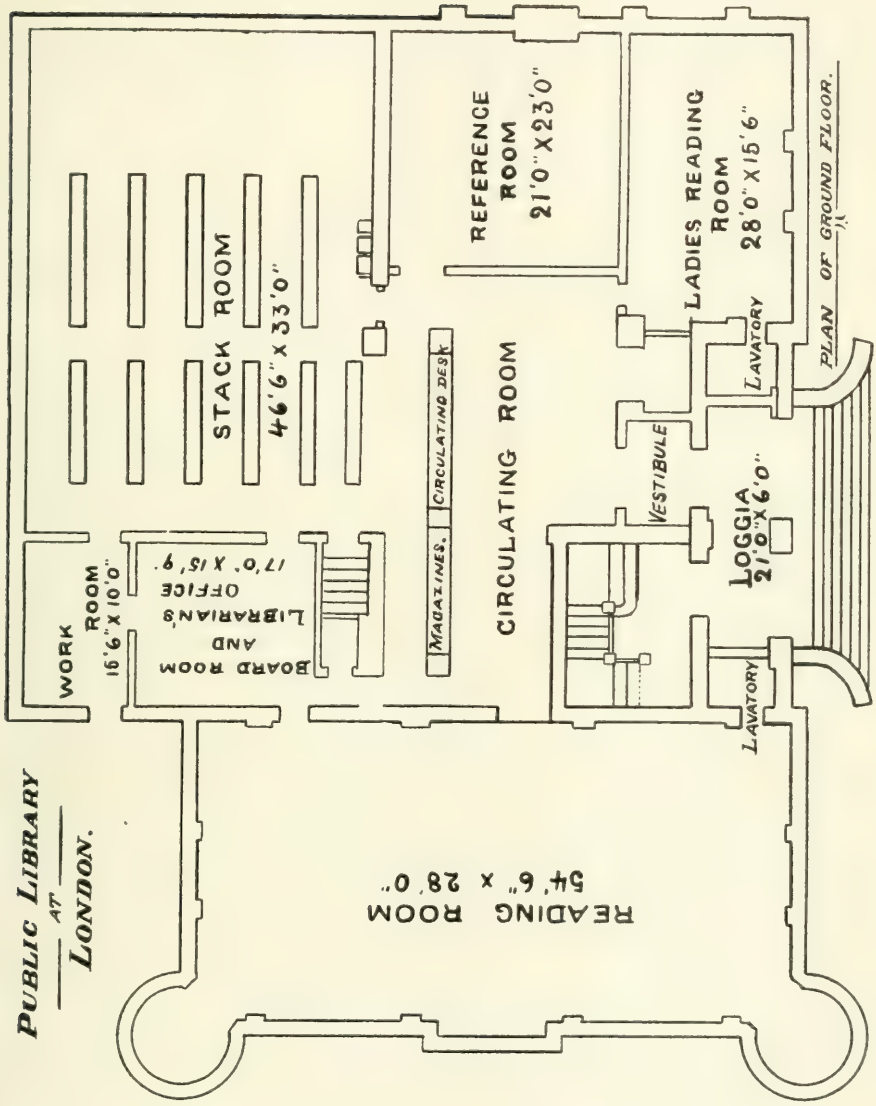
Members of Board when Library was opened:—

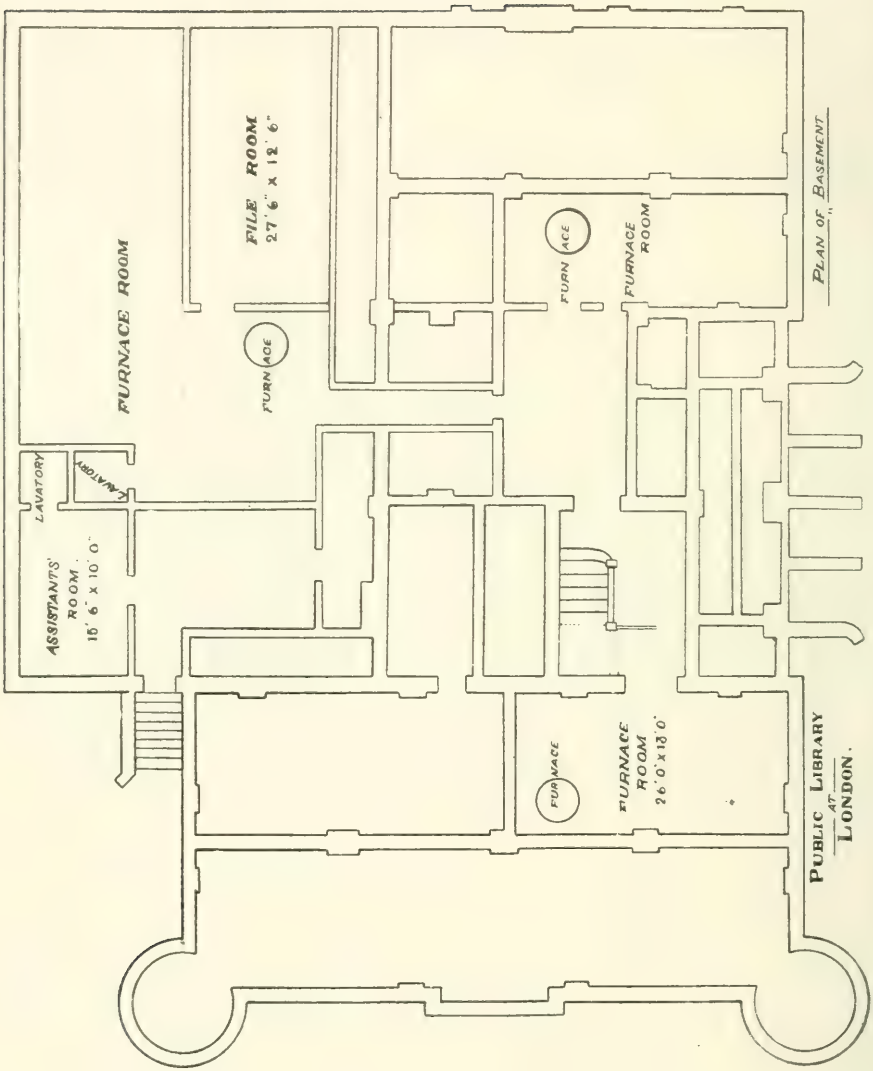
Robert Reid (Chairman), E. R. Cameron, E. E. Keene, Judge Macbeth, Henry Macklin, Jas. Egan, H. R. Dignan, Mayor Little, J. T. Marks.

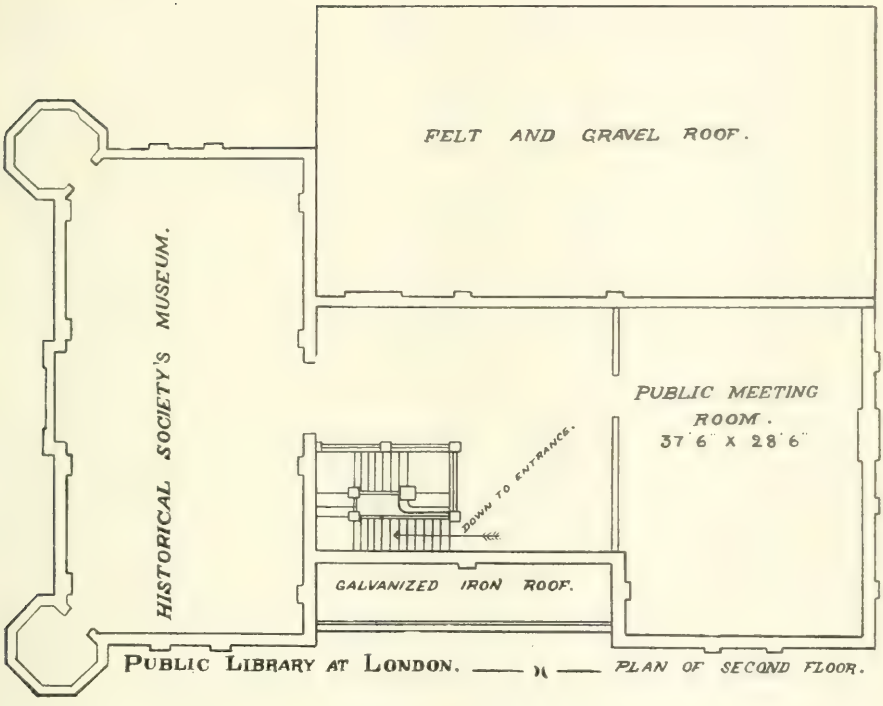
Staff, time of opening: Librarian: Mr. J. R. Blackwell. Assistants: Misses Mary Gray, Katie McLaughlin, E. Carlotta Leigh.

Free access is permitted to all books except Fiction. For this an "indicator" shows whether the book desired is in or out.

The London Public Library.


PUBLIC LIBRARY
AT
LONDON.
PLAN OF GROUND FLOOR.
1/8
READING ROOM
54' 6" x 28' 0"
WORK ROOM
16'6" X 10'0"
BOARD ROOM AND LIBRARIAN'S OFFICE
17'0" X 15'9"
STACK ROOM
46'6" X 33'0"
MAGAZINES.
CIRCULATING DESK
CIRCULATING ROOM
REFERENCE ROOM
21'0" X 23'0"
VESTIBULE
LOGGIA
21'0" X 6'0"
LAVATORY
LADIES READING ROOM
28'0" X 15'6"
LAVATORY


FURNACE ROOM
FILE ROOM
27'6" x 12'6"
FURNACE
FURNACE
FURNACE
FURNACE ROOM
ASSISTANTS' ROOM
15'6" x 10'0"
LAVATORY
LAVATORY
FURNACE ROOM
26'0" x 18'0"
FURNACE
PLAN OF BASEMENT
PUBLIC LIBRARY
AT
LONDON.



PUBLIC LIBRARY AT LONDON. —— PLAN OF SECOND FLOOR.

Age limit is 12 years.
System of classification and cataloguing: Dewey.
Card catalogue in Author, Title, and class is used. Printed catalogue and numerical lists of Fiction only.
No special work for children.
No provision made for juvenile department.

The Carnegie Public Library, Ottawa.

The first definite step taken for founding a Free Public Library was that of the Ottawa women in the early part of 1895. To attain this end the Committee obtained the co-operation of the Evening Journal. The proprietor generously placed his paper at the disposal of the ladies for a "Woman's Issue." The following were the principal officers of the staff:

Editor—Annie Howells Frechette.
Managing Editor—Mary McKay Scott.
News Editor—Ellie Cronin.
City Editor—Roberta E. Tilton.
Sporting Editor—Laura K. Masson.
Editor Home Department—Elizabeth Brymner.

The leading article on "A Public Library," was contributed by Marie W. Klotz. The paper was issued April 13th, 1895, and a profit of $500.00 realized. To secure municipal assistance a by-law was submitted in January, 1896. The by-law was defeated.

Under the Act of 1895 the Municipal Council appointed the following Library Board:—

The three appointed by the Council were W. Y. Soper, B. Sulte, Otto J. Klotz; those appointed by the Public School Board were A. W. Fleck, E. Seybold, and J. S. Durie; and those by the Separate School Board, R. J. Sims, and F. R. E. Campeau.

The Library Board met for the first time on July 2nd, 1897, when A. W. Fleck was appointed Chairman, and R. J. Sims Secretary.

The Library Board succeeded in having a library by-law presented to the Council for adoption prior to submitting it to the electors for ratification. But when it came up for a second reading on December 4th, 1899, it was defeated. Seeing no prospects in the near future for obtaining a public library for Ottawa, Dr. Klotz, who continued to be a member of the Library Board from its inception, took courage after months of hesitation in applying to an alien philanthropist to ask for a donation in that behalf. By a strange coincidence W. D. Morris, then Mayor, wrote on the following day to Mr. Carnegie on the same subject.

The Mayor received a reply on March 11th, 1901, as follows:—

"Mayor W. D. Morris,
Ottawa.

"Dear Sir,—

"Yours of 23rd received. If the City of Ottawa will furnish a site, and agree through council to tax itself to the extent of not less than $7,500 a year for maintenance of the library, I shall be glad to give $100,000 for a free library building.

Very truly yours,
Andrew Carnegie."

On the 15th April, 1901, the council accepted the gift of Mr. Carnegie.

Library Committee, 1906:—

Alderman Napoleon Champagne, Chairman.
His Worship, the Mayor.
Alderman Alfred W. Desjardins.
Alderman Charles Hopewell.
Alderman E. J. Laverdure.
Alderman J. Harold Putman, B.A.
Alderman S. Rosenthal.
Alderman Daniel Storey.
Alderman George H. Wilson.
John C. Glashan, Esq., LL.D.
James F. White, Esq., LL.D.
William J. Sykes, Esq., B.A.

Staff, 1906:—

Librarian, Lawrence J. Burpee.
Cataloguer, Miss Ruby Rothwell.
Reference Assistant, Adelard E. Proulx.
Circulating Department—Miss Barbara McDonald, Miss B. Sutherland, Miss B. Watt, Mdme. Cusson, Miss G. Major.

Name of Library: Carnegie Library, Ottawa.
When completed: April, 1906.
When opened: April 30th, 1906.
Material used in building: Indiana limestone and local freestone.
Wood used for interior finish: Golden oak.
Wood used for fittings: Golden oak.
Material used for book stacks: Steel.
Height of stacks: 7 ft.
Special work for children: A children's room with suitable books.
Other special work: Co-operation with schools and local societies.

Dimensions of rooms in basement:—

Newspaper room: 40 x 21.
Class room: 39-6 x 21.
Unpacking room: 27 x 26.
Bindery: 17 x 16.
Fuel room: 17 x 9.
Janitor's room: 23 x 18.
Boiler and fan room: 37 x 19.
Men's lavatory: 18 x 12.
Women's lavatory: 18 x 12.

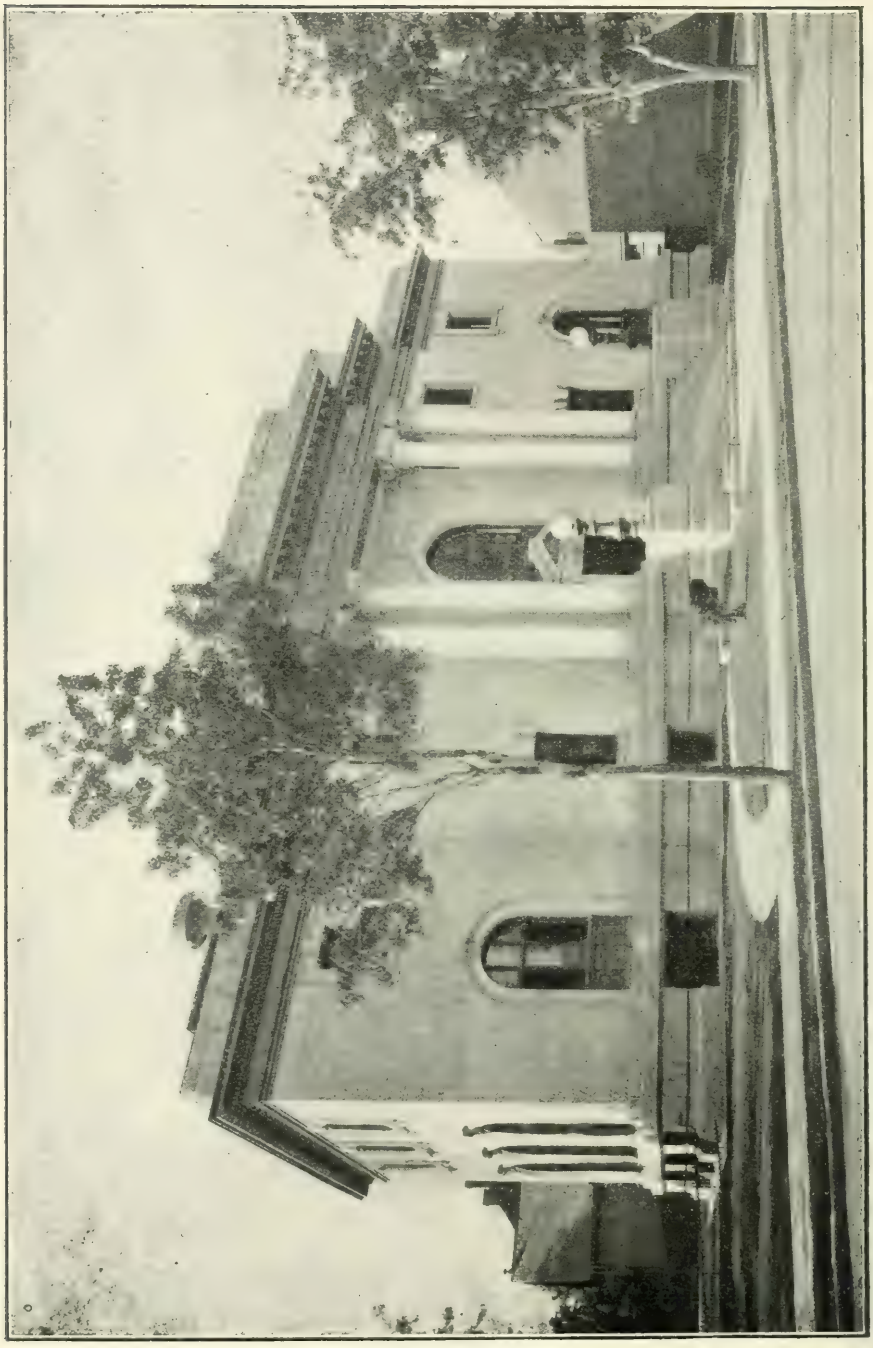
Second floor:—

Museum: 38-6 x 25.

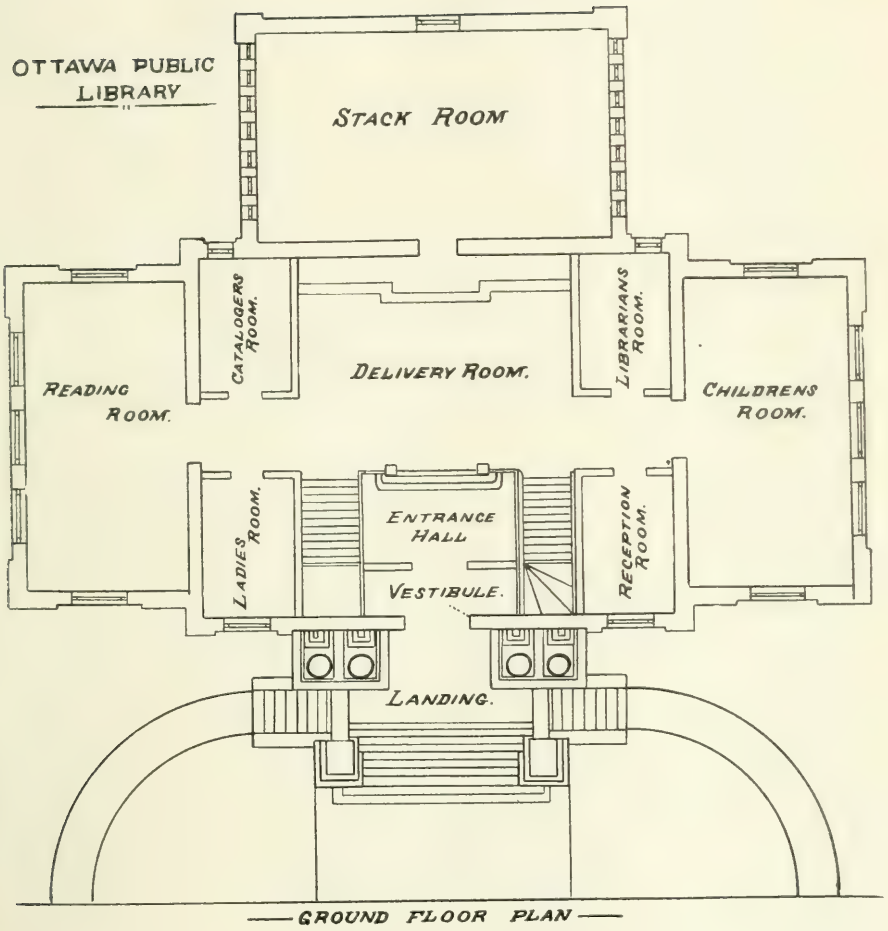
Outside dimensions of building: 115 x 105-4.

Dimensions of rooms on ground floor:—

Reading room: 40 x 22.
Cataloguing room: 19 x 12.
Ladies' room: 19 x 12.
Delivery room: 28 x 36.
Vestibule, hall and stairs: 36 x 18.
Librarian's room: 19 x 12.
Reception room: 19 x 12.
Children's room: 40 x 22.
Stack room: 28 x 48.



The Ottawa Public Library



GROUND FLOOR PLAN

Dimensions of rooms on first floor:—
Reference room: 40 x 22.
Ladies' rest room: 19 x 12.
Study: 18 x 12.
Board room: 19 x 18.
Dressing room: 21 x 5-6.
Stack room: 28 x 48.

Basement:—
Newspaper room, corresponding room in opposite wing unassigned, caretaker's room, furnace room, lavatories, storage room, under stack room, unpacking room, bindery room (at present used for book storage).

Main floor:—
Reading room, Children's room, Cloak room, Study room, Librarian's office, cataloguing room, stack room, in a separate wing arranged for three stories of steel stacks, capacity about 100,000 books.

Third story:—
Museum.

Open shelves in the reading room, the reference room and the children's room, but not free access to the stack room.

No age limit. Under 12 years classed as juvenile.

Cutter's expansive classification. Card catalogue arranged as a Dictionary Catalogue, to be supplemented by printed lists from time to time.

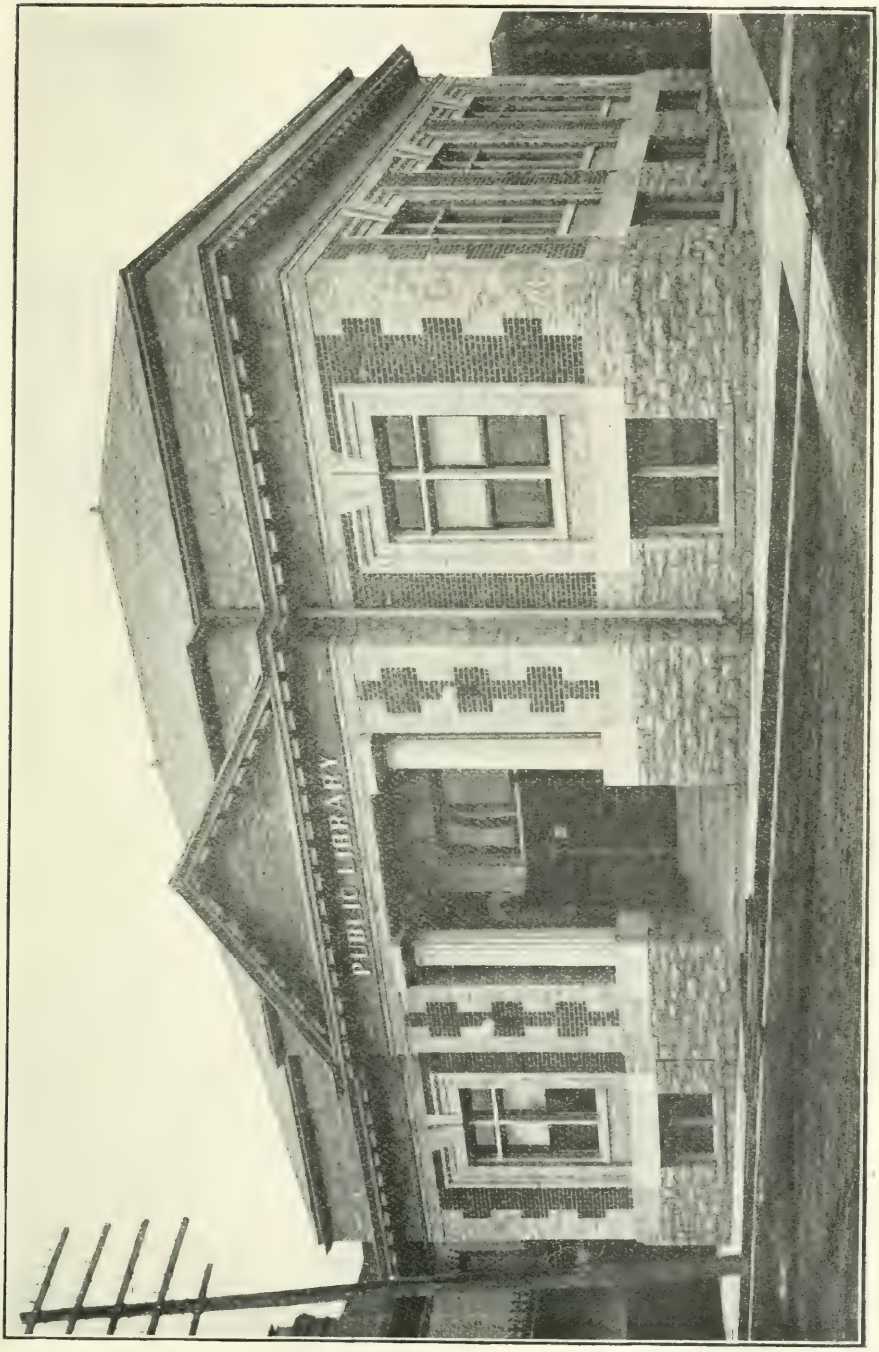
Cost of building: $100,000.
Cost of site: $21,000.
Gifts received from Mr. Carnegie: $100,000.
System of heating: Hot air.

The building is well arranged, but not for economical administration. With the present appropriation the building is not satisfactory. It requires a staff of ten or twelve. The present staff is inadequate.

The heating system was a mistake. Hot air is ruinous to books, particularly in the stack room, both because of its direct effect upon them and also by reason of the dust which is carried through the flues from room to room and deposited on the books.

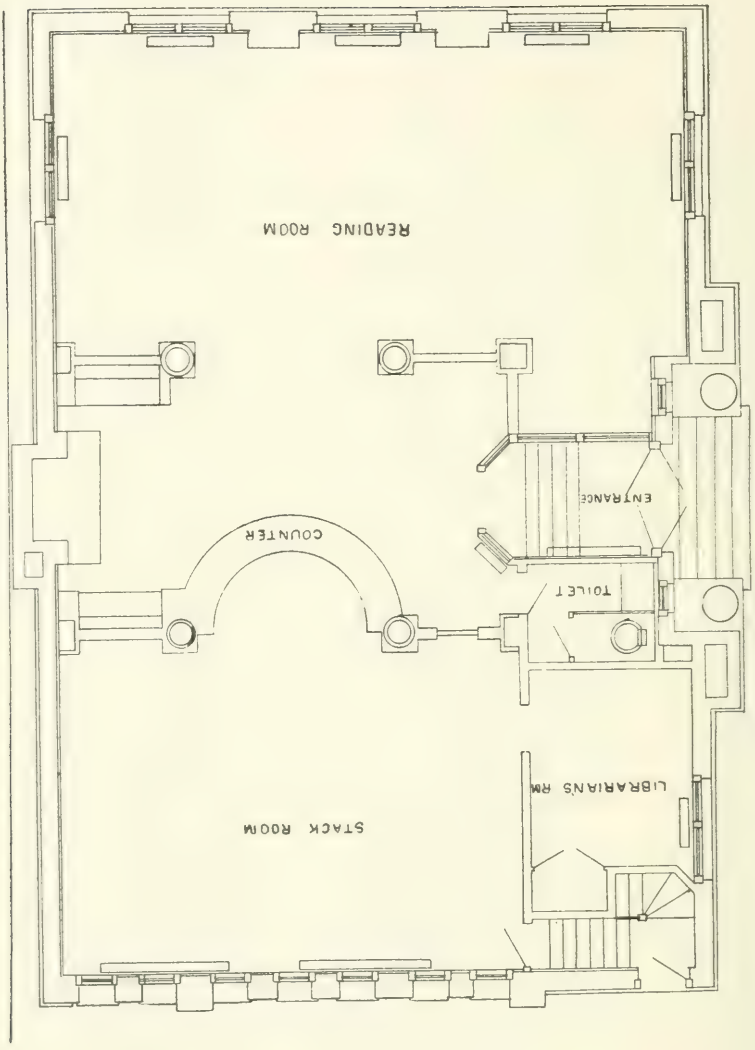
Paris Public Library.

Library completed: 1904.
Library opened: July 27th, 1904.
Materials used in building: Brick, stone trimmings, slate roof.
Size of building: 57 x 40.
Basement: Unfinished; one room used for repairing.
First Floor:—
One large room used as reading room and library combined: small room 10 x 12, used as Committee room.
Wood used for interior finish: Southern pine.
Wood used for fittings: Quarter-cut oak.
Materials used for stacks: Pine.
Provision has been made for increasing capacity of stack room.
Cost of building exclusive of lot: $10,000.
Cost of furnishings: $900.00, including stacks removed from old library.
System of heating: Hot air.



Paris Public Library.

PARIS PUBLIC LIBRARY



FLOOR PLAN

No defects observed in heating up to present.

The Rev. Canon Brown, Chairman of the old Paris Library Board, in his private capacity, wrote to Mr. Carnegie asking for a gift of $7,000 for a new libary building in Paris. He received a reply stating that not less than $10,000 would be given on the usual conditions.

Names of persons on Library Board when library was opened:—

Henry Stroud, Mayor; Rev. Canon Brown, Rev. J. E. Crinion, Dr. W. Burt, W. N. Bell, M. Ryan, J. Smiley, A. H. Baird, Paul G. Wickson, Hon. Sec.-Treas.

Name of official staff at time of opening:—

E. Reynett, Librarian.

Free access to books is permitted.

Age limit: 14 years.

Manuscript catalogue in use.

Sarnia Public Library.

Library completed and formally opened November 26th, 1903.

The building is of stone and pressed brick with cut stone trimmings, a metal dome and slate roof.

Size of building: 65 x 80.

The basement:—

Auditorium: 32 x 42.
Men's smoking room: 19 x 19.
Men's lavatory.
Cloak room.
Furnace room.
Coal room.
Storage room: 22 x 22.
Large room (not yet in use): 54 x 33.

Main floor:—

General reading room: 32 x 19.
Children's room: 19 x 20.
Board room: 19 x 12.
Rotunda: 22 x 22.
Librarian's office.
Ladies' lavatory.
Stack and reference room: 54 x 30.

Interior finish and fittings: Oak.

Floors: Maple.

Book stacks: Steel.

Height of stacks: 8 ft., except in Childrn's room where they are low and the cases oak.

Provision was made in original plan for increasing capacity of stack room.

Cost of building, exclusive of site: $20,000.

Cost of furniture (special library design): $1,500.

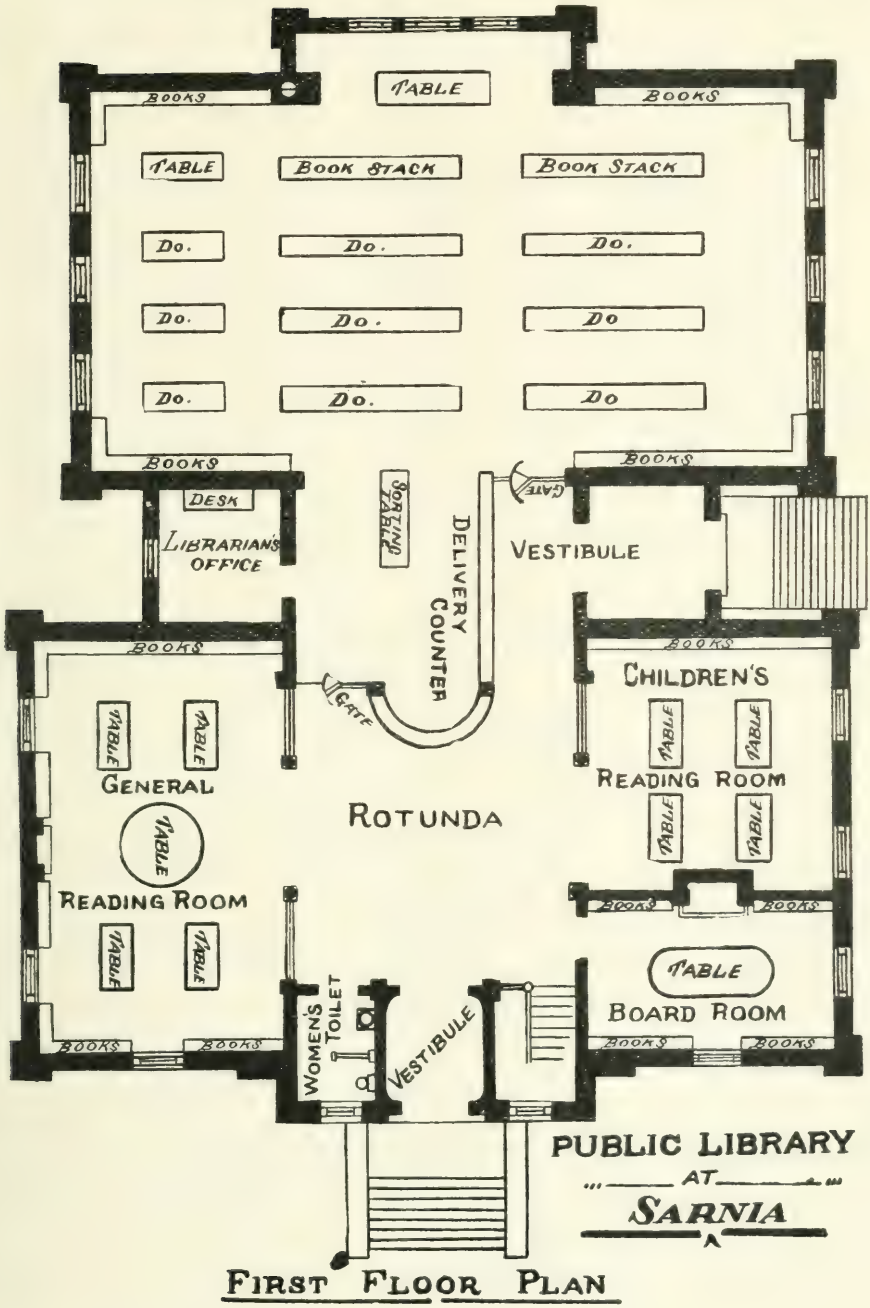
System of heating: Hot water, with grates in several rooms.

Heating system satisfactory.

The auditorium may be used by any body of a public or semi-public nature, without charge. The Historical Society, The Children's Aid Society, The Medical Association, The Camera Club and other Societies regularly meet in this room.

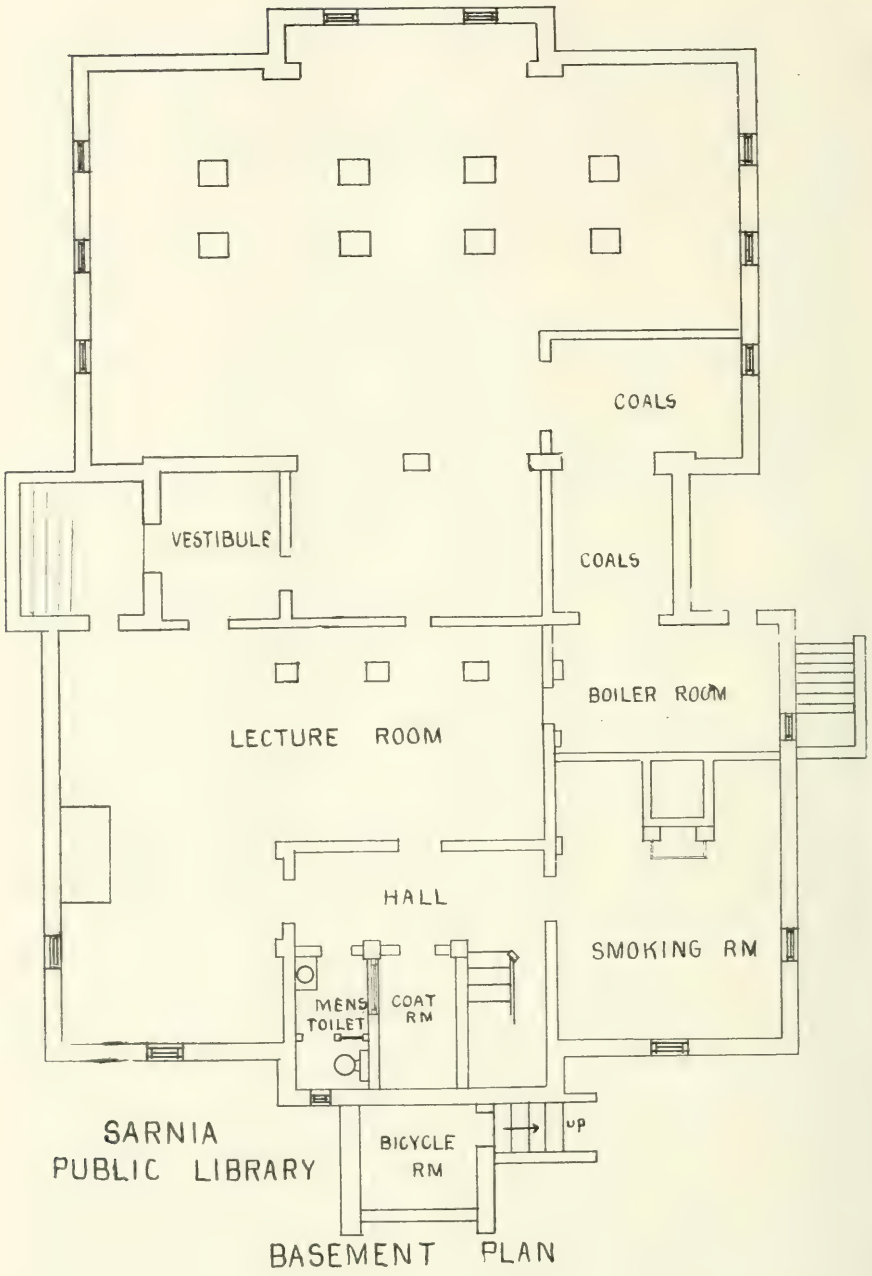
The Smoking room is supplied with newspapers and tables for chess and checkers are provided.

SARNIA PUBLIC LIBRARY



PUBLIC LIBRARY
AT
SARNIA

FIRST FLOOR PLAN


COALS
VESTIBULE
COALS
BOILER ROOM
LECTURE ROOM
HALL
SMOKING RM
MENS TOILET
COAT RM
BICYCLE RM
up
SARNIA
PUBLIC LIBRARY
BASEMENT PLAN

The Children's room contains all books for juveniles on shelves around the walls. These books are taken for reading in the room without the intervention of any attendant, or if desired for home use, the book is taken to the Librarian's counter and charged. In this room the chairs and tables are graduated in size so as to accommodate children of all ages. The walls are hung with pictures and the tables are supplied with children's magazines and periodicals. The librarian's counter projects into the rotunda, thus giving him supervision of all the rooms on the main floor.

The Board room is used for small public meetings when it is not necessary to use the auditorium. The Medical Association has its library on shelves around the walls of this room.

The west wing of the stackroom is used for reference books.

The width of the aisles between the stacks is five feet.

Chairs and tables are provided for those desiring to read in the stack room.

In 1902, the Library Board, through the Mayor, applied to Mr. Carnegie for a grant for a Library building. The request was complied with, and $15,000 given. In 1905, a second grant of $5,000 was secured for enlarging the stack room.

Library Board at time of opening of library:—

R. J. McArthur, Chairman; J. J. Spereman, Secretary; Mayor Barr, Rev. J. R. Hall, Robert McAdams, H. W. Mills, D. D. Moshier, M. Sullivan and Norman Gurd.

Official staff:—

William Sweet, Librarian.
Patricia Spereman, Assistant Librarian.
Arthur Payne, Janitor.

Free access to the books is permitted.

No age limit exists, but children cannot become members without consent of parents.

System of classification: Dewey decimal.

Card catalogue.

Special attention is devoted to library work for children.

Books suitable for children in every department of literature have been freely purchased. The assistant librarian has been given special charge of children's work.

A story hour has been inaugurated by the children's librarian.

Stories are told to the children so as to interest them in great men, or events, and in nature study, science, etc. The children are told what books are in the library dealing with the subject of the story, and encouraged to read for themselves.

The policy of the Board has not been to send out Travelling Libraries to the schools, but to bring the children to the library.

The Board has secured the co-operation of the teachers who make lists suitable for the different forms. Copies of these lists are given to the children's librarian, and to the scholars in each form, and form part of the school curriculum.

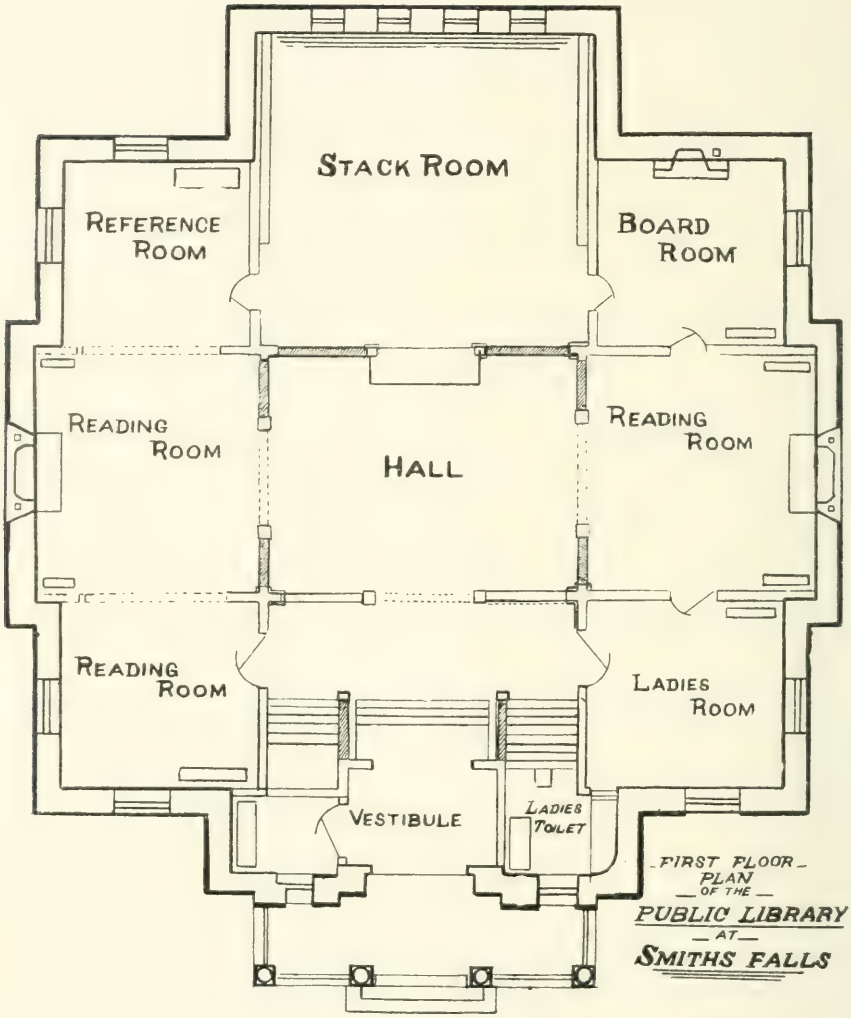
The Library Board publish reviews of important books in the town papers.

Bulletins are issued of books on important subjects.

No fees are collected for cards.

Any resident of the Town on signing an application may become a member without a guarantor, whether he is a property owner or not.

Two books may be drawn at a time, provided only one is fiction.



FIRST FLOOR PLAN OF THE PUBLIC LIBRARY AT SMITHS FALLS

Smith's Falls Public Library.

In January, 1902, Mr. G. F. McKim, who had been an active member of the Library Board for several years, wrote to Mr. Andrew Carnegie asking for a gift of $10,000 to aid in the erection of a new library building. The request was granted upon the usual conditions. Mr. McKim then interviewed Mr. C. B. Frost and the Hon. F. T. Frost. These gentlemen offered to donate $10,000 in twenty annual payments of $500 each towards the maintenance. Mr. W. H. Frost also offered $100 a year for 20 years for the same purpose, and Mr. Carnegie's gift was increased to $11,000. The propositions were accepted by the Town Council. Plans were prepared in 1903 by Mr. G. M. Bayly, Architect, and the building was completed during the year under the supervision of Senator Frost, Mr. H. A. Lavell and Mr. McKim acting as Building Committee. The library was formally opened on the 25th of February, 1904. On the 28th of April, 1906, Mr. Carnegie visited the library and expressed himself as greatly pleased with it. He pronounced the building the handsomest small library which he had seen.

Material used in building: Stone basement with superstructure of pressed brick, trimmed throughout with white wood.

Size of building: 57 x 51.

Rooms in basement: Recreation room, 14 x 42; janitor's apartments, including kitchen, dining room, bedroom, parlor and bathroom, boiler room and store room.

Rooms on First Flat:—Reading room, 15 x 43; reading room, 17 x 18; rotunda, 18 x 18; Board room and a ladies' waiting room.

Rooms on Second Flat:—A hall, seating capacity of 200.

Wood used for interior finish: White wood, stained.

Material used for stacks: White wood.

Provision has been made for increasing the capacity of stack room.

Cost of building exclusive of lot: $11,000.

Cost of furnishings: $900.

System of heating: Hot water.

Gifts from Mr. Carnegie: $11,000.

Names of persons on Library Board when library was opened:

G. F. McKim, A. G. Farrell, H. A. Lavell, J. A. Houston, F. Whitcomb, W. J. Keith, R. J. Brodie, S. W. Gilroy.

Names of official staff at time of opening:—

Edith Sutton, Librarian.

F. Shepherd, Janitor.

Is free access to the books permitted? No.

Is there an age limit? No.

St. Mary's Public Library.

Library completed: July 18th, 1905.

Formally opened: August, 1905.

Material used in building: St. Mary's limestone.

Size of building: 50 x 40.

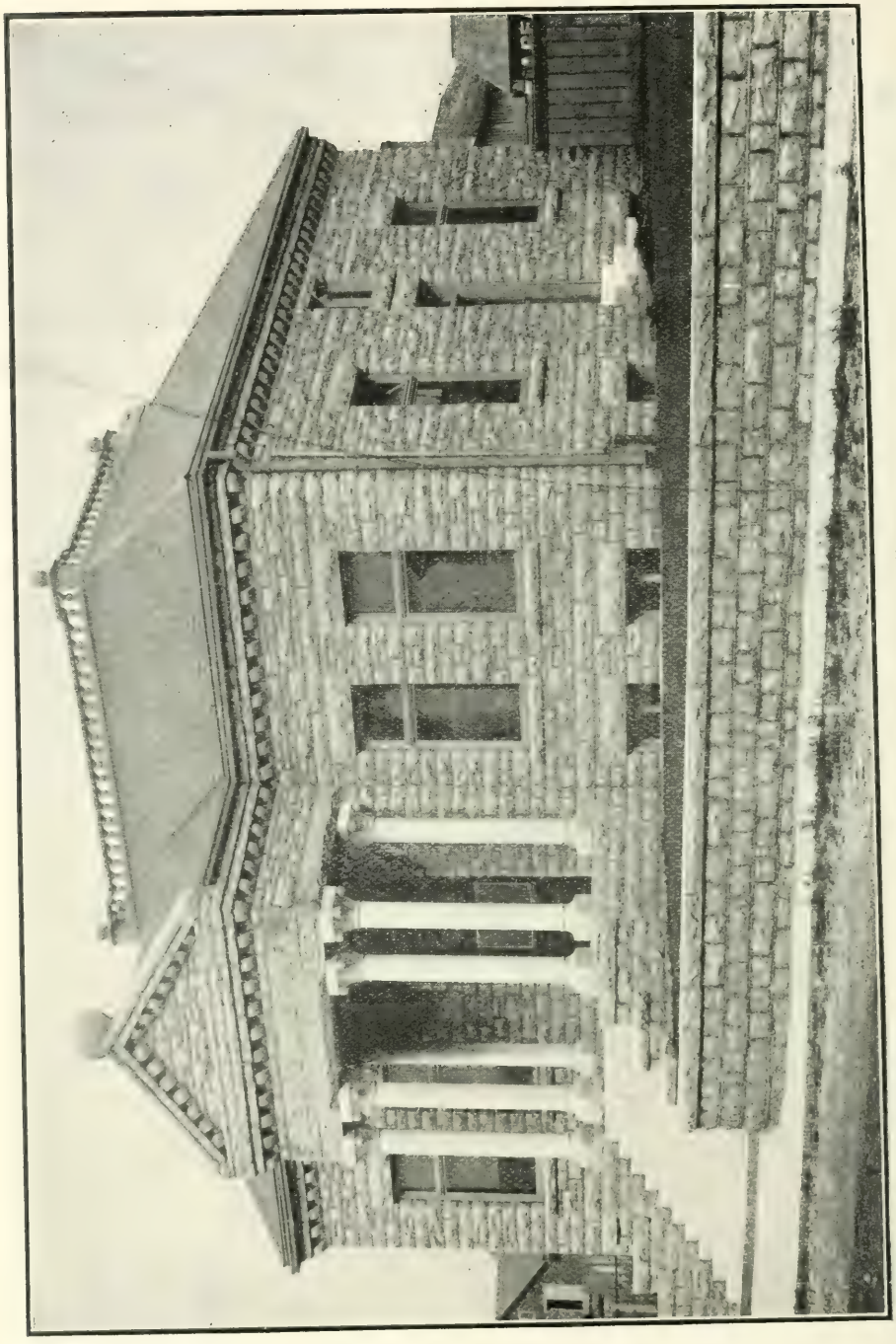
Basement:

Store room, 15 x 36.

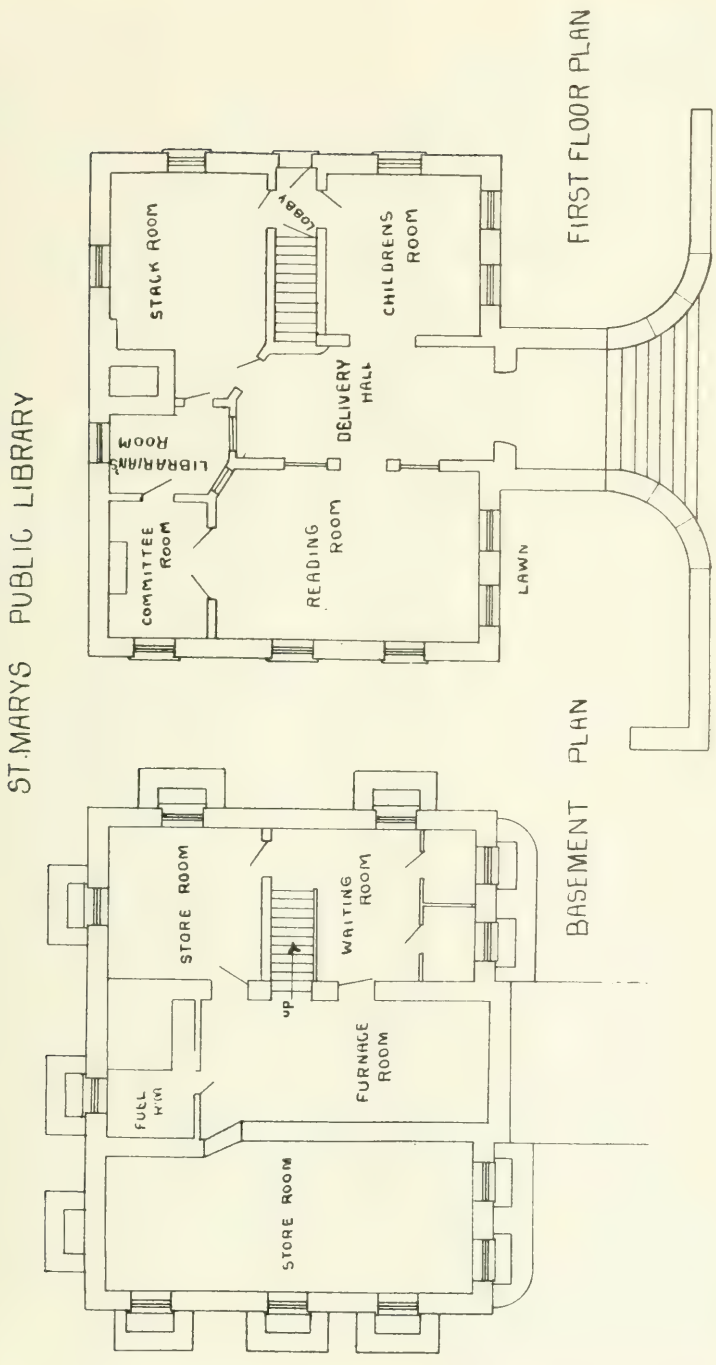
Furnace room, 12 x 28.

Fuel room: 15 x 15.

Waiting room: 15 x 20.



The St. Mary's Public Library


ST. MARYS PUBLIC LIBRARY
FIRST FLOOR PLAN
STACK ROOM
LOBBY
CHILDRENS ROOM
DELIVERY HALL
LIBRARIANS ROOM
COMMITTEE ROOM
READING ROOM
LAWN
BASEMENT PLAN
STORE ROOM
WAITING ROOM
UP
FURNACE ROOM
FUEL
STORE ROOM

First Floor:—
Reading room: 17 x 25.
Board room: 9 x 13.
Stack room: 8 x 12.
Hall: 11 x 24.

Second Floor:—
One room.

Wood used for interior finish: Oak.
Wood used for fittings: Oak-mission.
Material used for stacks: Oak.
Height of stacks: 7 ft.
Provision has been made for increasing capacity of stack room.
Cost of building exclusive of lot: $8,961.
Cost of furnishings: $1,057.
System of heating: Hot air.
Gifts from Mr. Carnegie, $10,000.

On the 8th of February, 1904, the Town Council passed a resolution asking for a gift of $10,000 from Mr. Carnegie. The request was granted upon the usual terms.

Members of Library Board when library was opened:—
H. L. Rice, S. K. Martin, J. Sclater, D. Currie, J. Egan, R. S. Box, R. Graham, J. Robert.

Names of official staff:—
H. L. Rice, Chairman.
J. Robert, Secretary.
Lottie King, Librarian.

Free access to the books is not permitted.
Age limit, 14 years.
Printed catalogue.

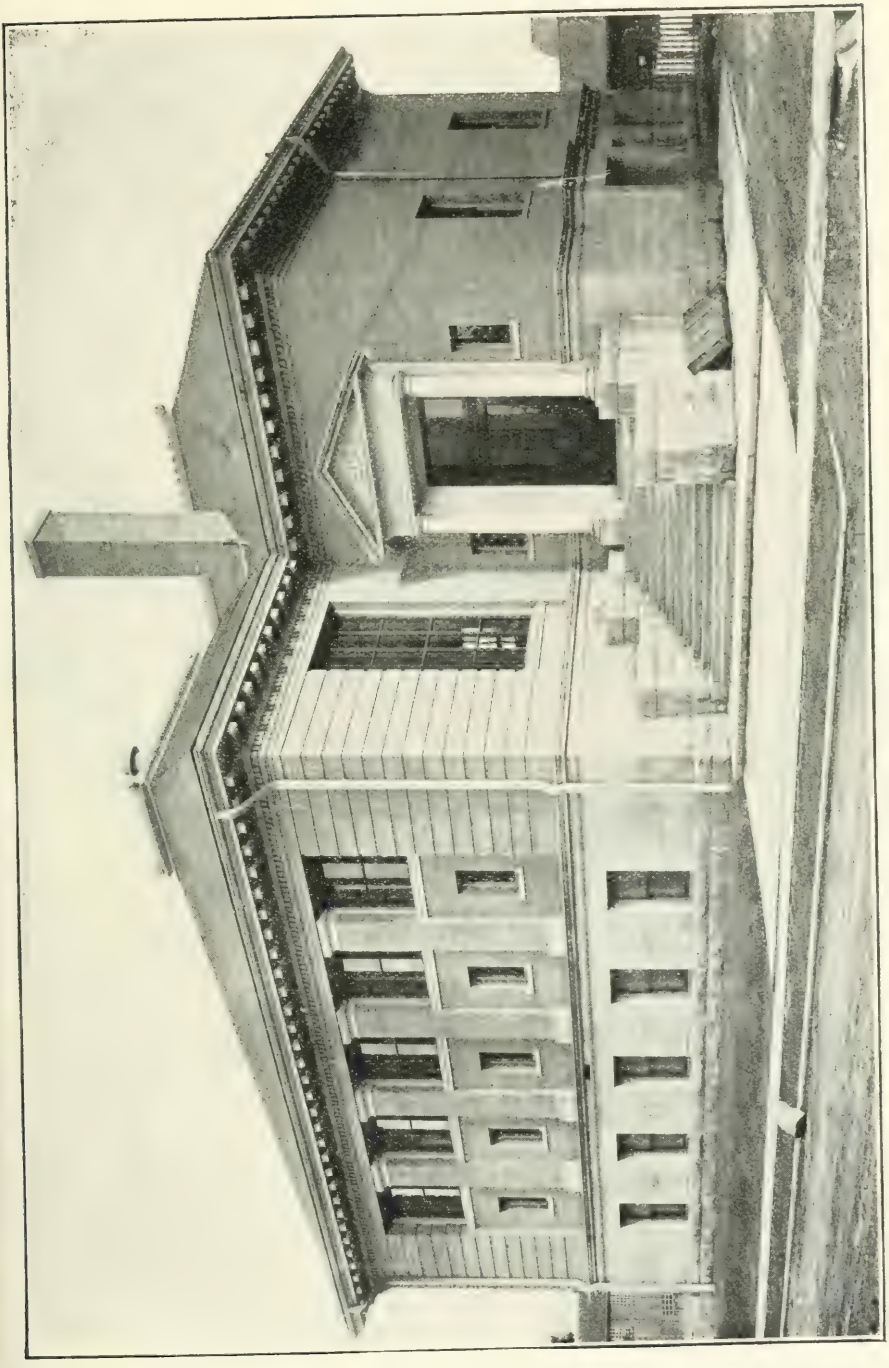
St. Thomas Public Library.

In 1902, Mr. W. H. Murch, President of the Board of Trade, communicated with Mr. Carnegie, through his agent, as to his willingness to make a grant for the building of a new library, and received a favorable reply. The Public Library Board accordingly made a formal application to Mr. Carnegie.

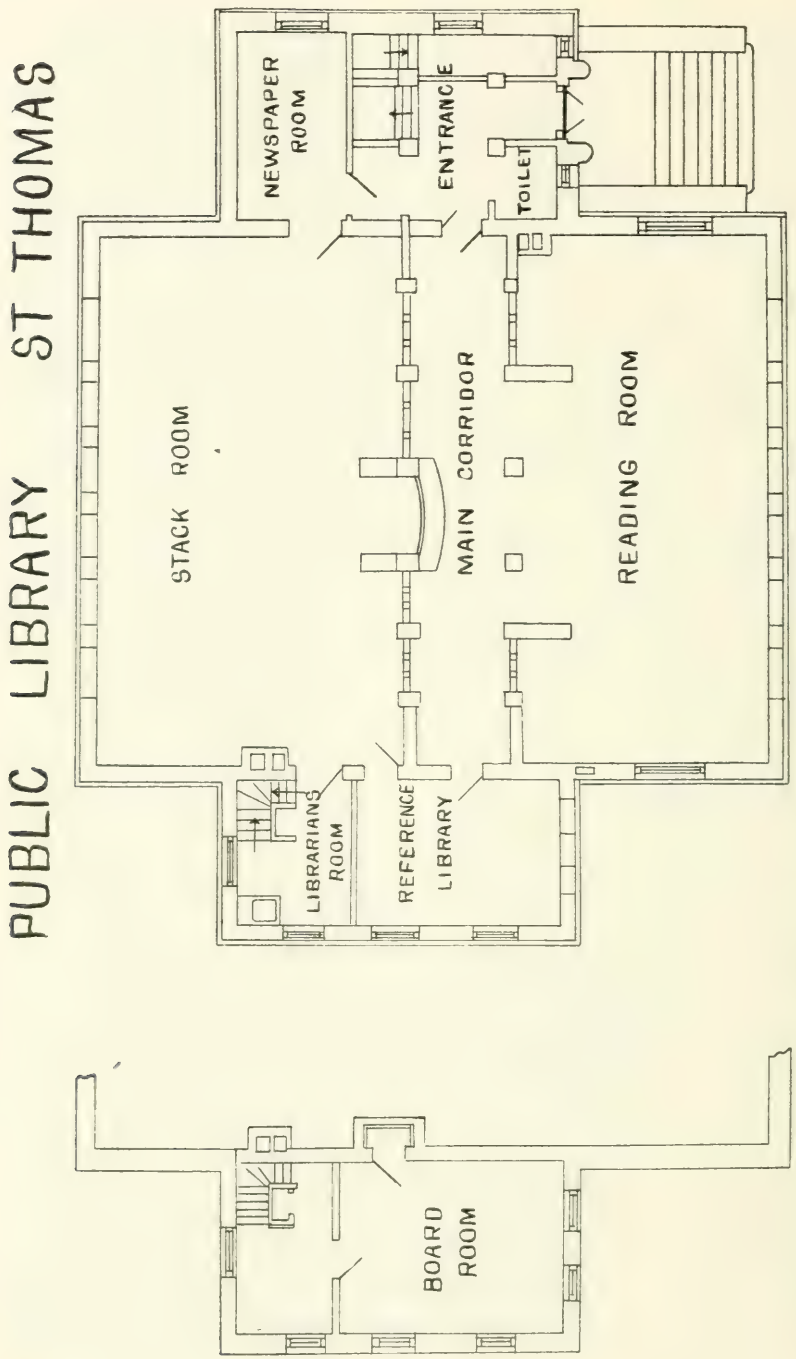
In May, 1903, the agreement with Mr. Carnegie came before the City Council for ratification, and the terms were formally accepted. In the same year a building lot was purchased to the rear of the City Hall, and during 1904 and 1905 the buiding was erected. Mr. Carnegie's grant amounted to $27,000—$25,000 for the building and $2,000 for the furnishings.

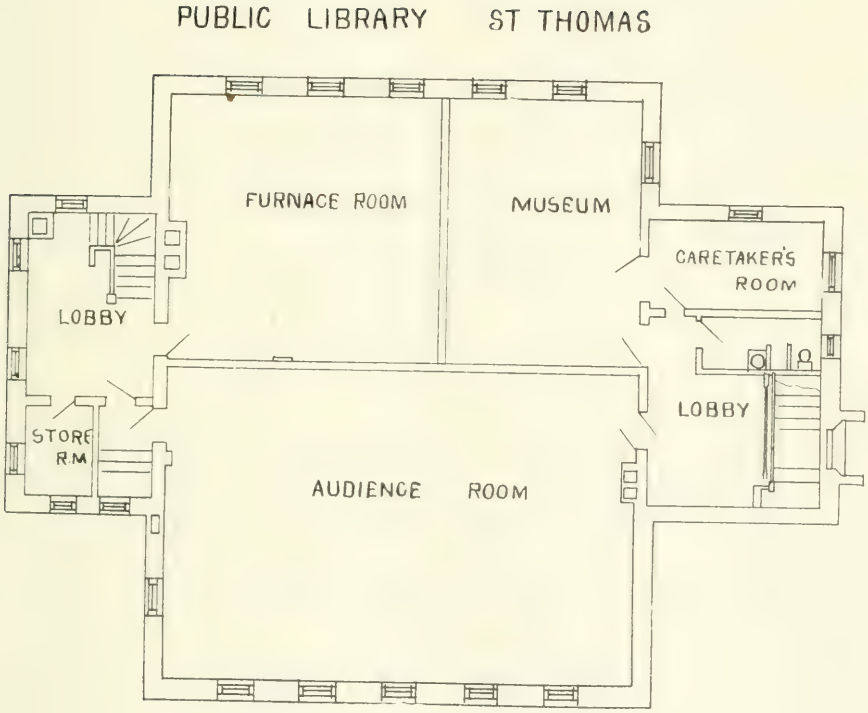
On February 10th, 1906, the new Library Building was formally opened, and addresses were delivered by members of the Board, prominent citizens, and representatives from other libraries.

At the time of the formal opening the Library Board consisted of the following members:—
His Worship, Mayor Lawrence.
Geo. Crocker, Esq., Chairman.
O. J. Stevenson, M.A., D. Paed, Secretary.
D. Ferguson, Esq.
Samuel Price, Esq.
C. W. Regan, Esq.



St. Thomas Public Library


PUBLIC LIBRARY ST THOMAS
NEWSPAPER ROOM
ENTRANCE
TOILET
STACK ROOM
MAIN CORRIDOR
READING ROOM
LIBRARIANS ROOM
REFERENCE LIBRARY
BOARD ROOM
GROUND FLOOR PLAN


PUBLIC LIBRARY ST THOMAS
FURNACE ROOM
MUSEUM
CARETAKER'S ROOM
LOBBY
LOBBY
STORE R.M
AUDIENCE ROOM
BASEMENT PLAN

D. W. Newcombe, Esq.
A. Killingsworth, Esq.
T. B. Wright, Esq.

The officers consisted of:—

Mrs. A. C. MacDonald, Librarian.
Miss K. Frazer, Assistant.

Shortly after the opening of the library Mr. T. B. Wright, having previously resigned from the Board, was appointed caretaker of the library, and Mr. W. H. Murch was appointed by the City Council to fill the vacancy on the Board.

Rooms on each floor and their uses:—

Basement: Two halls, lavatory, and five other rooms, viz.—
The auditorium, capable of seating 300 persons. Meetings of an educational character only are permitted. A small fee is charged for the use of the room, to cover cost of lighting. The auditorium was first used on February 23rd, 1906, two weeks after the opening of the library, for a lecture by the Canadian poet, William Wilfrid Campbell.
Two rooms set apart for a museum.
Two rooms intended for furnace rooms, but now used as rooms for storing, unpacking, etc.
Ground floor: Vestibule, hall, lavatory, main corridor and five other rooms, viz.—
The magazine room and general reading room.
The stack room.
The news-room, for daily and weekly papers only.
The reference room.
Typewriter and repairing room.
First floor: Cloak room and Board room situated directly above the Reference room. The Board room has a balcony looking out over the main corridor, stack room and reading room.

Free access given to the books, except fiction.

Age limit: Nominally children under twelve are not permitted to take out books, but in reality the matter is left to the discretion of the librarian. From $50.00 to $100.00 per year is granted for the purchase of books for use in the Collegiate and Public Schools.

System of classification and cataloguing: Our librarian was this summer sent to Boston, Mass., to learn the Dewey System, and this system is now being introduced. We intend to have a printed catalogue for the books in fiction, and an indicator to show whether they are in or out. Books in fiction will be numbered according to the Cutter table. For books other than fiction we intend to use the Card Catalogue and the Dewey classification.

Cost of building, exslusive of site: $25,000 for the building; $2,000 for the furnishings; $27,000 in all.

Library completed: December, 1905.
Formally opened: February 9th, 1906.
Materials used in building: Buff brick with stone facings.
Wood used in interior finish: Black ash.
Wood used in fittings: Golden oak.
Material used for stacks: Steel.
Height of stacks: 7 feet 4 inches.
Provision has been made for increasing the capacity of stack room.
Gifts from Mr. Carnegie: $27,000.

Lighted by electricity.

System of heating: The building is heated with exhaust steam from the city gas works.

The following newspaper clipping will explain the system in further detail:—

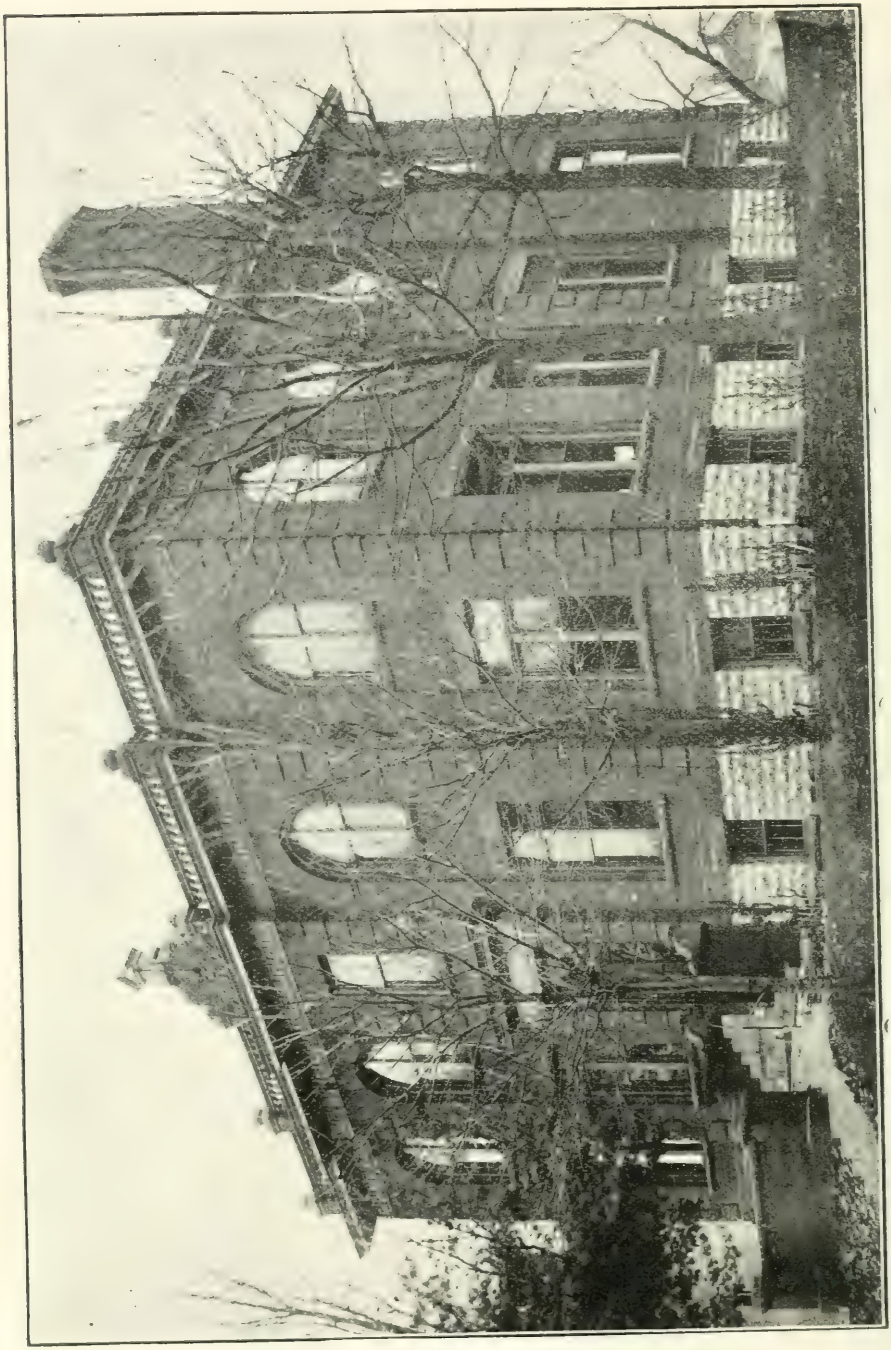
The city of St. Thomas has just installed a system of heating for the Public Library and the City Hall by utilizing the exhaust steam from the Street Railway engines at the power house, which is now a waste product. The system is as follows:—The exhaust steam is carried through a heater which is filled with small corrugated tubes, these tubes being filled with water. In passing through this heater the water is heated to a temperature the same as the steam. Then by means of a force pump it is forced through a main pipe four inches in diameter to the buildings, where it is attached to the mains and the radiators in the buildings.

"There is also a return pipe which carries the water back after passing through the radiators, when it is again heated either by the speed of the pump or by control valves placed on the mains as they enter each building. The 4 in. mains and the return pipe which carry heat to the buildings are laid underground. They are covered with asbestos wool to prevent the heat escaping, and then wrapped with hemp packing and enclosed in a 12-inch vitrified tile with cement joints. The saving of this system will be practically the whole cost of heating the buildings with coal. There will also be the saving of the labor attending the firing of the furnaces."

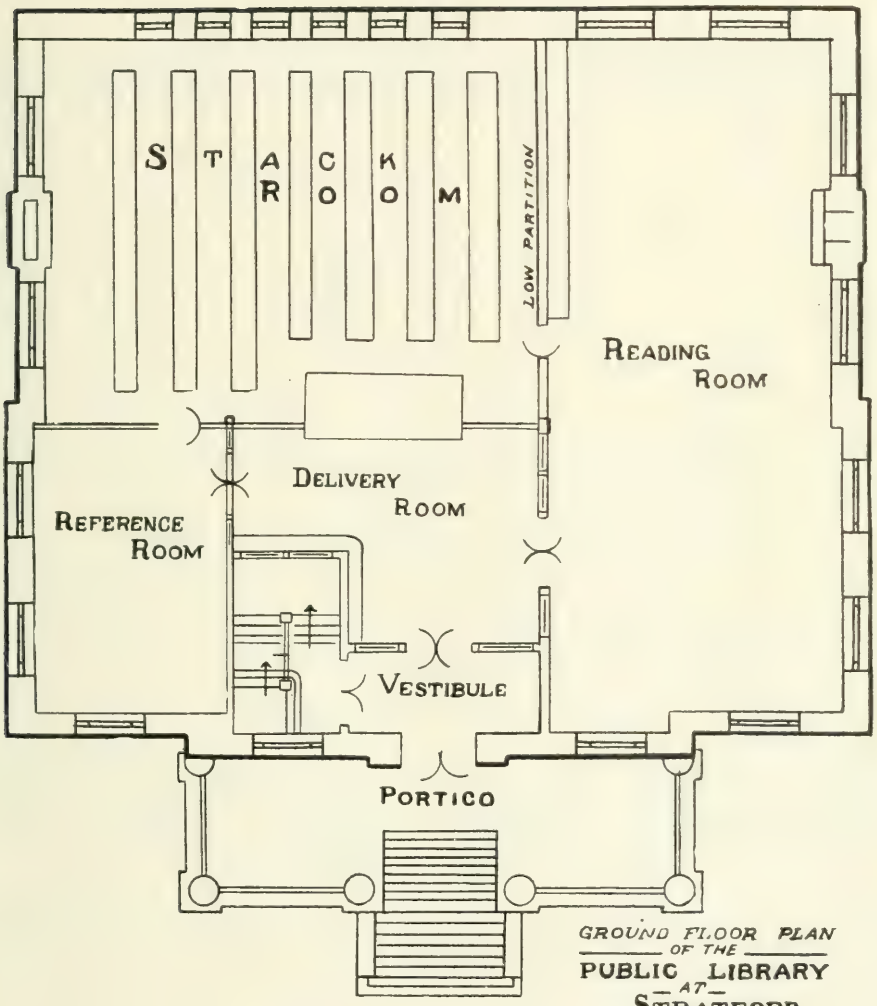
Defects in the present building: The only defect that we have yet noticed is that the newspaper room is not quite large enough.

Stratford Public Library.

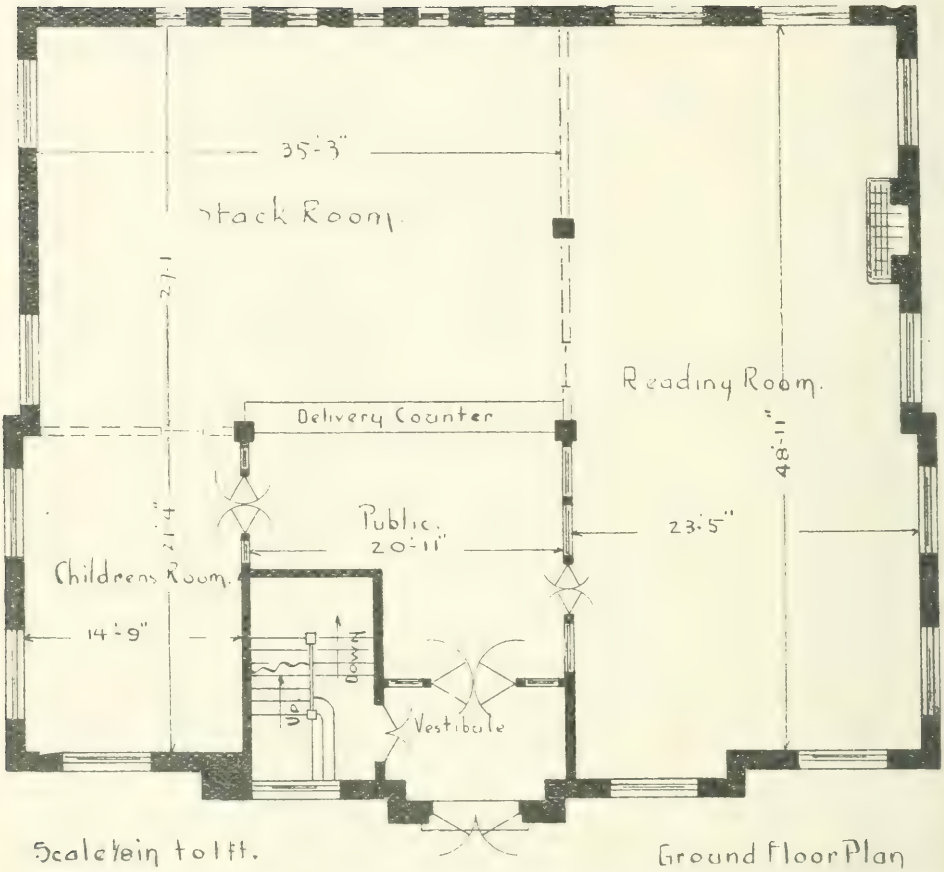
Library completed: September, 1903.
Material used in building: Red brick, stone foundations.
Size of buildings: 53 x 62.
The basement:—
Janitor's residence, furnace room and coal bins, storage room.
First flat:—
Reading room: 22.6 x 50.6.
Central delivery hall: 21 x 17.
Stack room: 25 x 27.
Reference room: 27 x 10.
Children's reading room: $21\frac{1}{2}$ x $14\frac{1}{2}$.
The rooms are separated by grills and glass so that both reading rooms are under the eye of the librarian at the delivery desk.
Second flat:—
Auditorium: 27 x 58.
Board room: $21\frac{1}{2}$ x 15.
Special room: 36 x 18.
Cost of building exclusive of site: $14,600.
Cost of fittings: $500.
System of heating: Steam.
Heating satisfactory.
Wood used in finishing building: Ash.
Wood used in fittings: Ash.
Grant from Mr. Carnegie: $15,000.



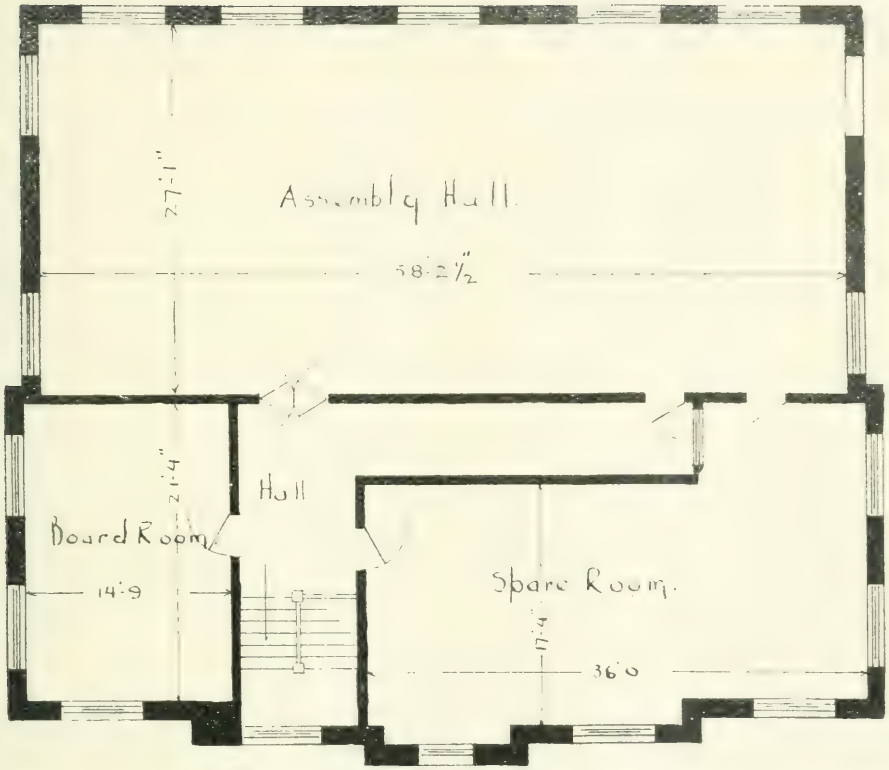
The Stratford Public Library



GROUND FLOOR PLAN
OF THE
PUBLIC LIBRARY
AT
STRATFORD

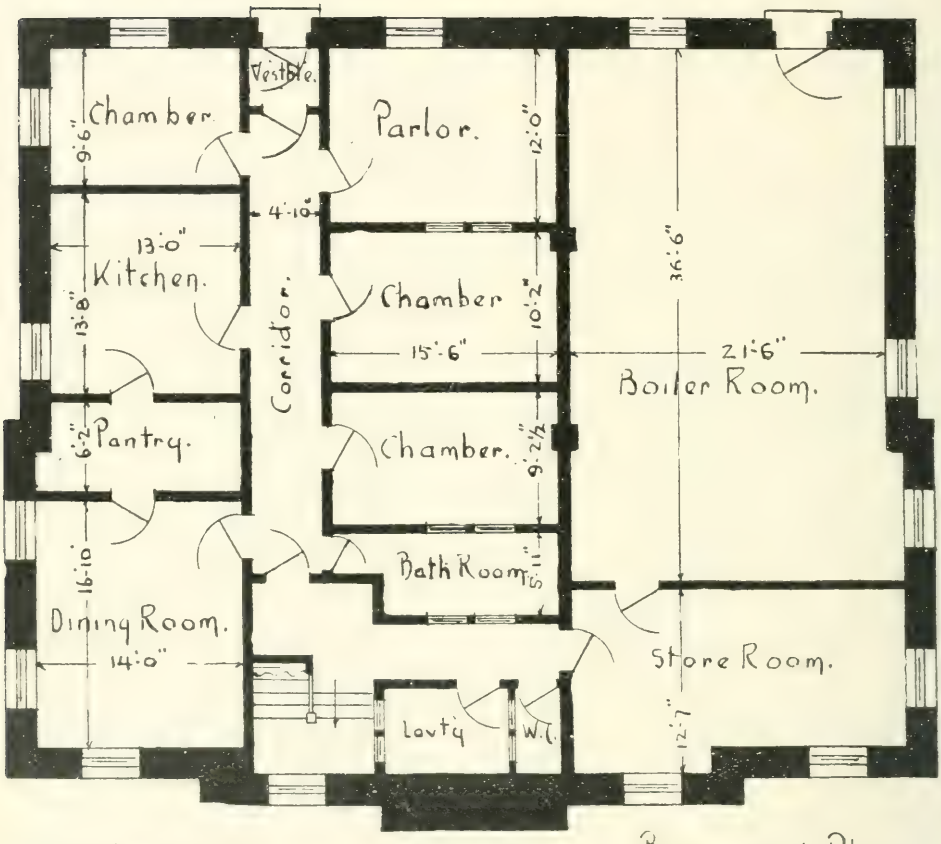

35-3"
Stack Room
27-1"
Reading Room.
Delivery Counter
48-11"
Public.
20-11"
23-5"
Childrens Room.
21-4"
14-9"
Down
Up
Vestibule
Scale ⅛ in to 1 ft.
Ground Floor Plan

STRATFORD



First Floor Plan

STRATFORD



Scale ⅛in. to 1ft.

Basement Plan.

STRATFORD

The correspondence with Mr. Carnegie was taken charge of by Mr. R. T. Orr, Chairman of the Library Board.

The Board for 1902:—

J. Steele, Chairman; R. T. Orr, Secretary; J. R. Stuart, W. J. Ferguson, H. A. Barker, J. O'Loane, J. A. Devlin, J. Stamp, Mayor.

Library Board for 1903:—

J. R. Stuart, Chairman; R. T. Orr, Secretary; the remainder of the board being the same as in 1902, with the exception that W. Hepburn replaced Mr. Stamp as Mayor.

Librarian: Miss L. Johnston.

Assistant Librarian: Mrs. E. Robertson.

Free access is permitted to all books except fiction.

Age limit: 12 years.

Classification:—

In printed catalogues under 30 heads. The shelf grouping is in 12 sections, biography, poetry and religion being classified by author, history and travel by country alphabetically, physics and science by sub-section under title. The Dewey system will replace the present system at an early date.

Waterloo Public Library.

Up to 1903 the Library and Reading Room had its quarters in a part of the Market building. It served the purpose well in the early years, but had become totally inadequate. A request was preferred to the Town Council for better accommodation, which it was found impossible to give without erecting a separate building. The Mayor then communicated with Mr. Carnegie and asked upon what conditions he made grants for the erection of libraries. Mr. Carnegie replied that the grants were made on conditions that the town furnish a free site and guarantee to spend annually in the maintenance of the Library, an amount equal at least to one-tenth of the sum granted. The matter was then brought before the Board of Trade and it was decided to make a requisition for $10,000, and a recommendation was sent on to the Town Council to pass the necessary by-law to guarantee free site and to spend at least $1,000 annually in maintenance of the Library. A certified copy of this by-law, together with a statement of the town's population and assessment and the leading facts about the Public Library were forwarded to Mr. Carnegie and a grant of $10,000 was made.

The first Library Board after the Library was completed was:—

David Bean, Chairman; C. A. Haehnel, Secretary; J. G. Stroh, W. H. Riddell, Rev. Father Spetz, George Cork, Rev. E. A. Schultz, Peter Fischer, and the Mayor of the town.

Emma B. Roos, Librarian.

Library completed: September 1st, 1905.

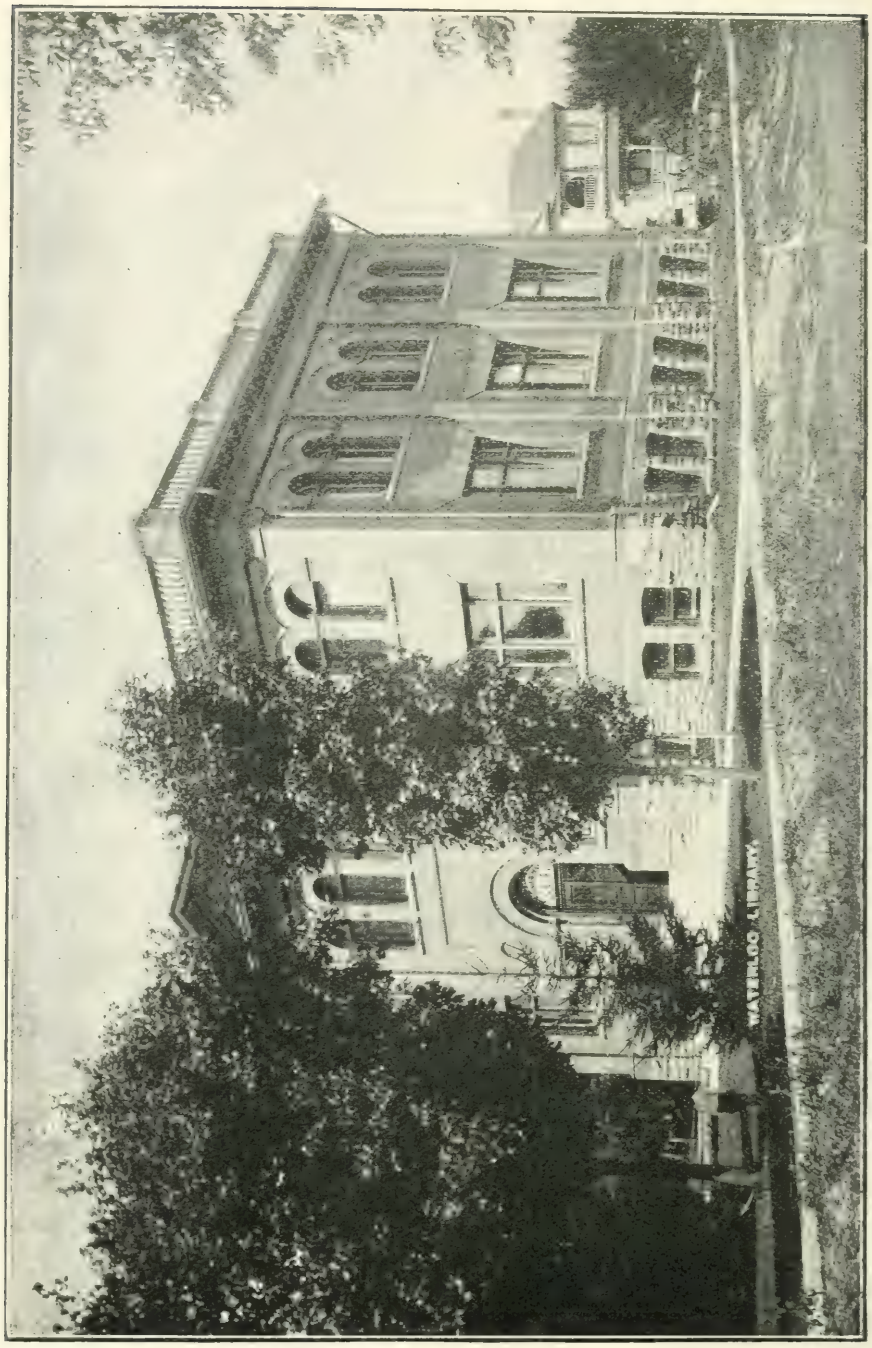
Library opened: November 6th, 1905.

Material used in building: Stone and brick.

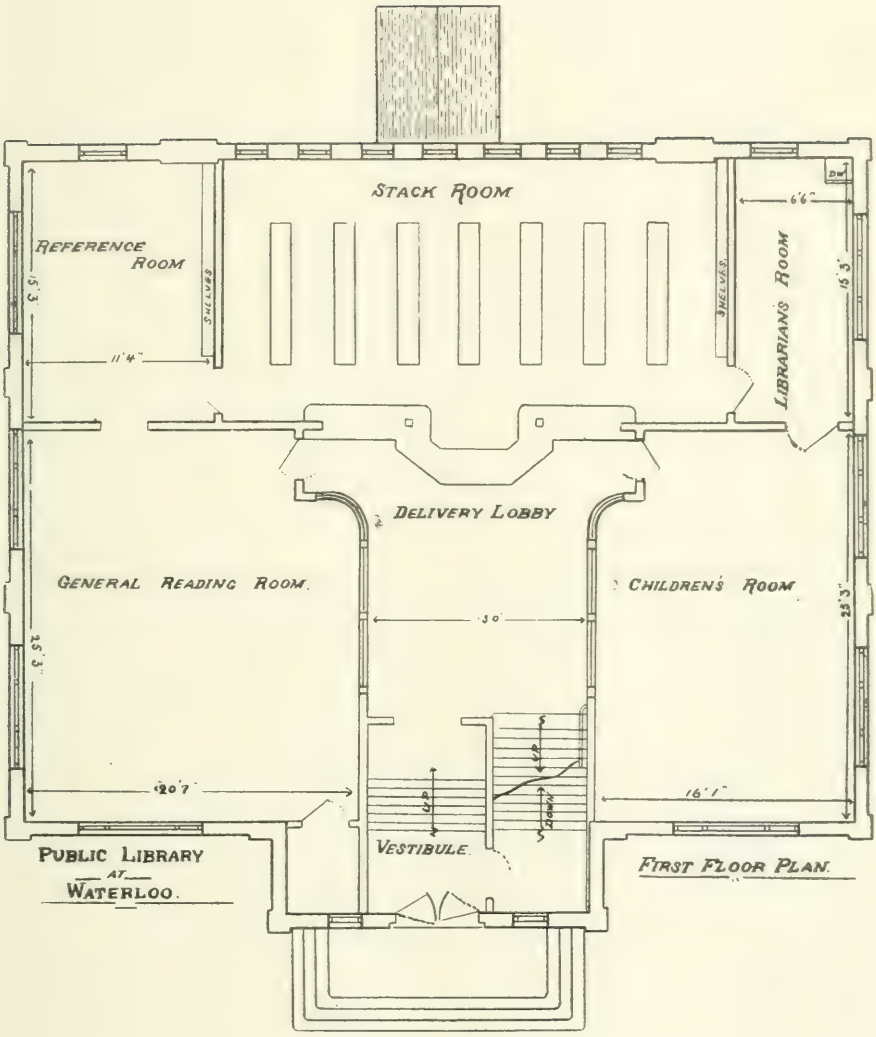
Size of building: 54 x 44.

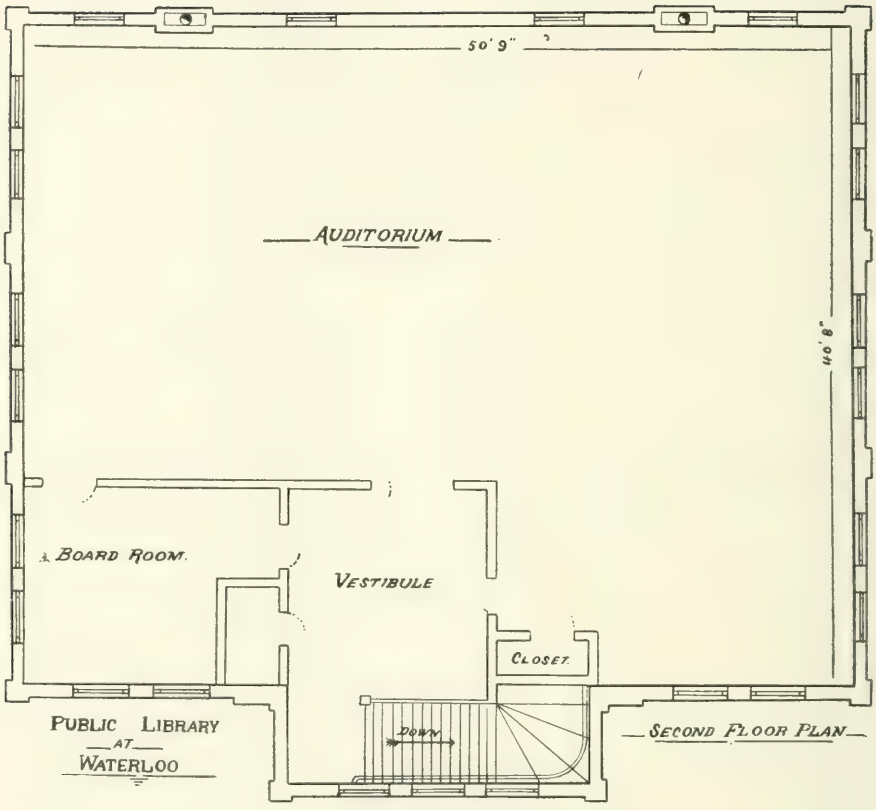
The number of rooms on each flat including uses to which they are put.

Basement:—



The Waterloo Public Library


STACK ROOM
REFERENCE ROOM
15'3"
11'4"
3 SHELVES
3 SHELVES
6'6"
LIBRARIAN'S ROOM
15'3"
DELIVERY LOBBY
GENERAL READING ROOM.
CHILDREN'S ROOM
30'
25'3"
25'3"
20'7"
16'1"
VESTIBULE.
PUBLIC LIBRARY
AT
WATERLOO.
FIRST FLOOR PLAN.


50' 9"
AUDITORIUM
40' 8"
BOARD ROOM.
VESTIBULE
CLOSET.
DOWN
PUBLIC LIBRARY
AT
WATERLOO
SECOND FLOOR PLAN

First floor:—
General reading room: 25 x 21.
Vestibule: 25 x 13.
Children's room: 25 x 16.
Reference room: 15 x 11.
Librarian's room: 17 x 15.

Second floor:—
Board room: 14 x 12.
Vestibule: 12 x 12.
Hall: 51 x 28 (all in one room).

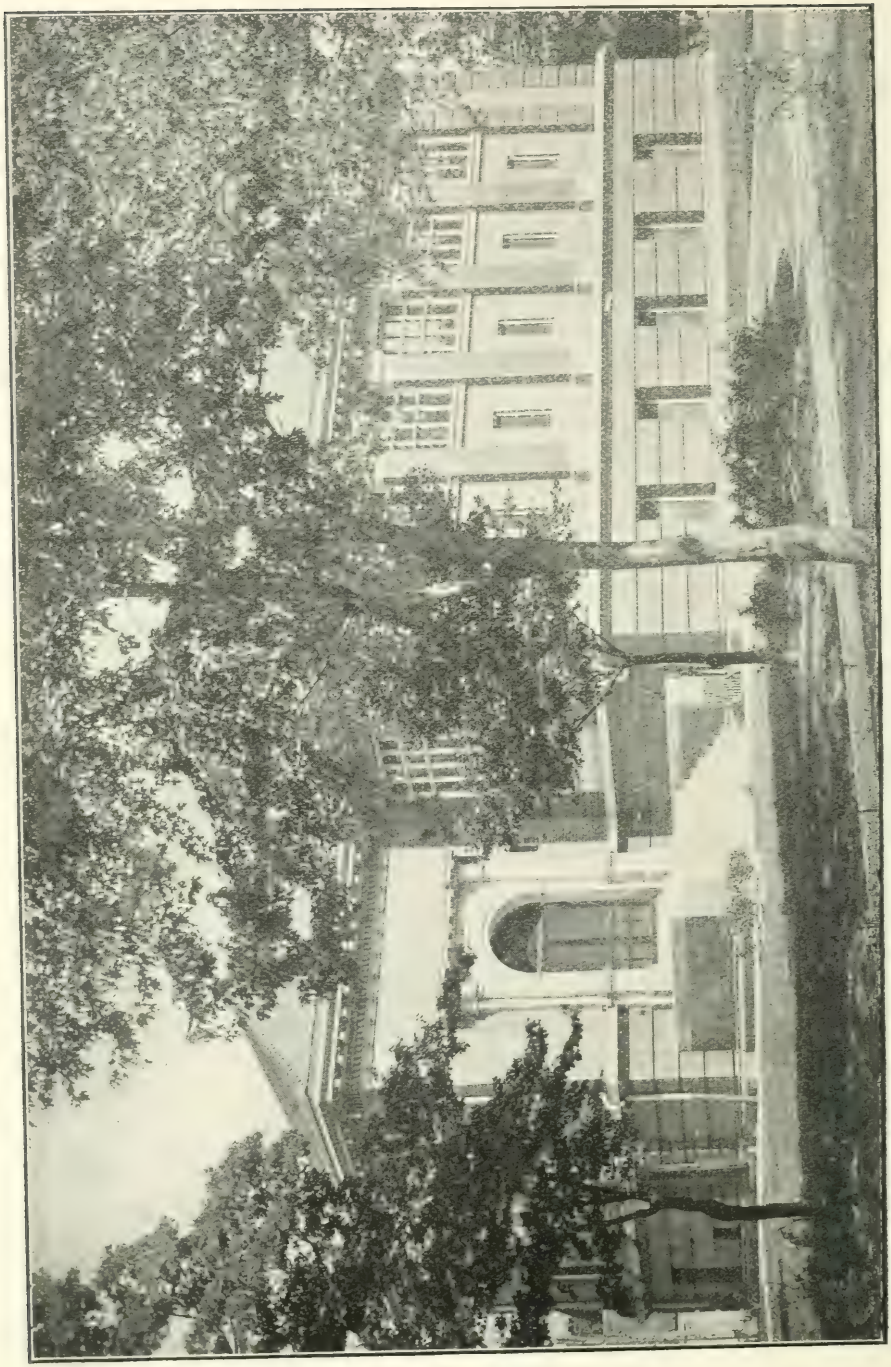
Wood used for interior finish: Ash.
Wood used for fittings: Ash.
Material used for stacks: Ash.
Height of stacks: 7 ft.
Provision has been made for increasing capacity of stack room.
Cost of building, exclusive of lot: $9,253.75.
Cost of furnishing: $1,401.34.
Free access is not given to books.
Age limit: 12 years.
System of classification and cataloguing: Dewey decimal.
System of heating: Hot air.
The heating system might be improved.
Special work: A catalogue for children.

Windsor Public Library.

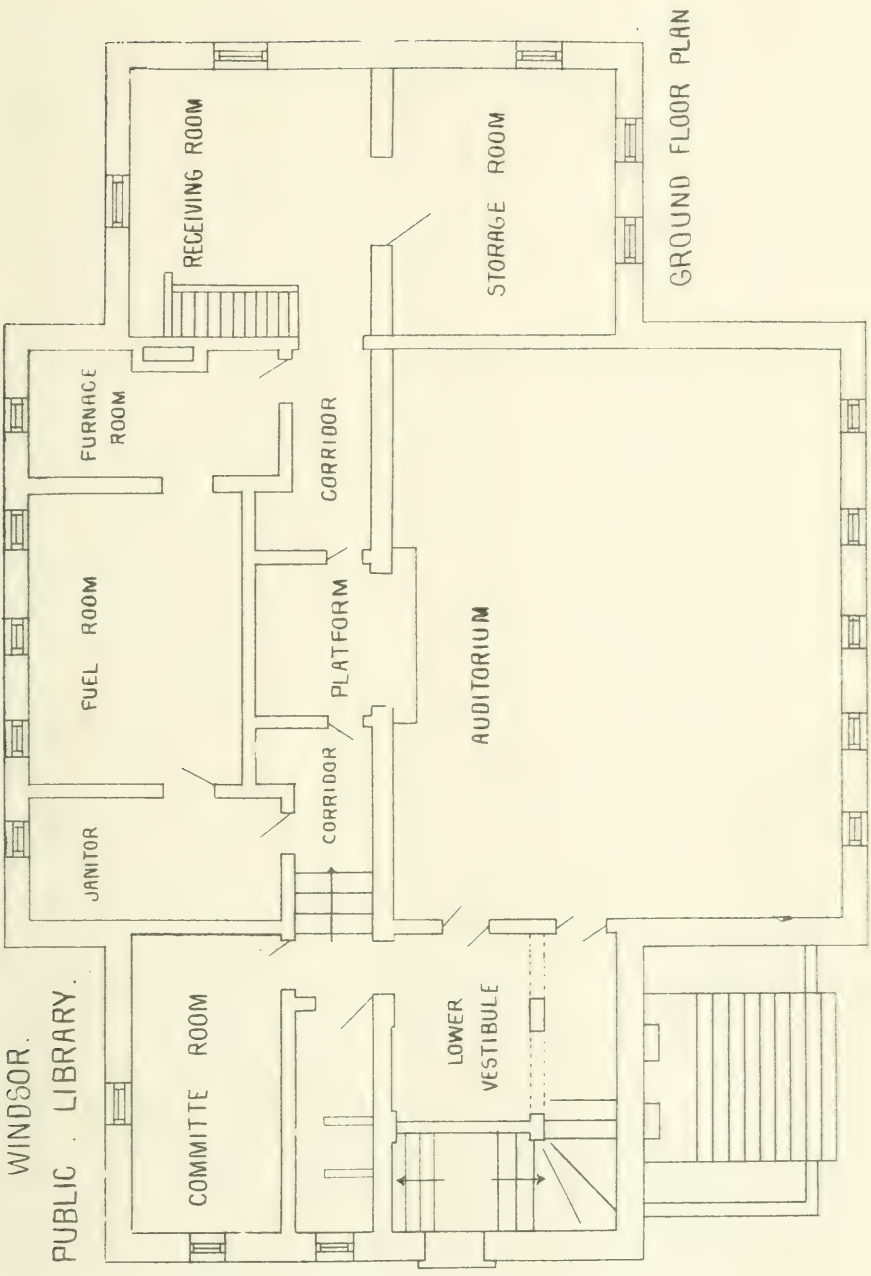
Mr. Andrew Braid began correspondence with Mr. Andrew Carnegie with a view to his donating funds for a new Library, the frame building which had done duty since the formation of the library having become entirely inadequate. The correspondence resulted in Mr. Carnegie offering $25,000 on the conditions he usually stipulates as to a free site and appropriation of an annual sum for proper maintenance of the Library. The offer was laid before the City Council and accepted; a site was selected and purchased, and the new building (erected from plans drawn by John Scott & Co., architects, Detroit, Mich.) was opened on the 16th of October, 1903, the ceremony being performed by the Hon. Richard Harcourt in his capacity of Minister of Education. Mr. Carnegie later on made a further donation of $2,000, bringing the contribution up to $27,000.

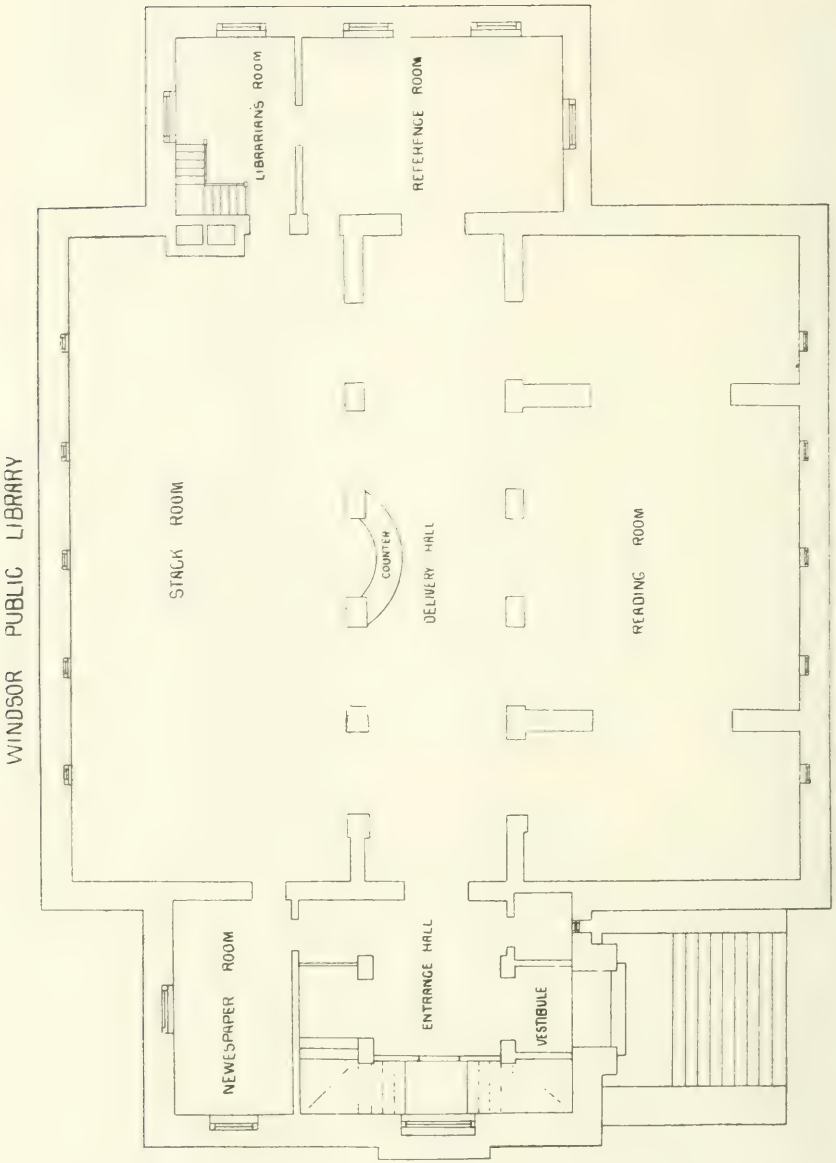
The members of the Library Board of Management at the time of the opening were as follows:—J. E. D'Avignon, Chairman of the Board; Andrew Braid, Secretary of the Board; A. P. E. Panet, Chairman of the Building Committee; and Rev. J. C. Tolmie, W. S. Cody, John E. Gow, John Connelly and A. F. Coulter. Librarians were: Miss Honora Watson, with Miss F. Eva McCrae and Miss Anna Watson for assistants.

Library completed: October 10th, 1903.
Library opened: October 16th, 1903.
Materials used in building: Brick with stone facings.
Size of building: 92.4 x 63.7.
Wood used for interior finish: Red oak and hard maple.
Wood used for fittings: Oak.
Material used for stacks: Steel.
Height of stacks: 7 ft. 6 in.



The Windsor Public Library


WINDSOR.
PUBLIC . LIBRARY.
GROUND FLOOR PLAN
COMMITTE ROOM
LOWER VESTIBULE
JANITOR
FUEL ROOM
FURNACE ROOM
RECEIVING ROOM
CORRIDOR
PLATFORM
AUDITORIUM
STORAGE ROOM


WINDSOR PUBLIC LIBRARY
FIRST FLOOR PLAN
LIBRARIAN'S ROOM
REFERENCE ROOM
STACK ROOM
COUNTER
DELIVERY HALL
READING ROOM
NEWSPAPER ROOM
ENTRANCE HALL
VESTIBULE

Provision has been made for increasing capacity of stack room.
Cost of building, exclusive of lot: $25,000.
Cost of furnishings: $1,600.
Free access is given to stack room and reference room.
Age limit: 16 years. Librarian is given discretionary powers.
System of classification: Dewey decimal.
System of heating: Low pressure steam.

Basement:—

Auditorium: 24.6 x 53.
Fuel room: 23 x 16½.
Boiler room: 15 x 16½.
Storage room: 14.10½ x 16.11¼.
Storage room: 9.9½ x 18.10.
Committee room: 12.9 x 16½.

First floor:—

Entrance: 10.6 x 11.
Delivery room: 11.6 x 53.
General reading room: 23 x 53.
Reference room: 15 x 22.6.
Librarian's room: 10 x 13.
Stack room: 23½ x 53.
Ladies' reading room: 10 x 18.10.

Second flat:—

Board room: 15 x 22.6.

APPENDIX I.—*REPORT OF THE LIBRARIAN OF THE EDUCATION DEPARTMENT.*

To the Honourable R. A. Pyne, M.D., LL.D., M.P.P.,
Minister of Education for the Province of Ontario.

Sir,—I have the honour to submit herewith the Report of the Library of the Education Department for the year 1906.

The number of books loaned during the year as contained in the following Table is 7,208, being 300 more than in 1905, an increase of about 5 per cent.

The Library loaned 23 books each week day in the year, the books remaining out for two weeks at a time.

It is gratifying to be able to report that not a single book has been lost during the past year.

For many years the Teachers residing in Toronto have enjoyed the privilege of taking out books from the Library relating to the various branches of education in which they were specially interested. Many advantages, I have no doubt, accrued to them through this privilege, of which they were sensibly appreciative. I am now issuing books to two teachers who, while actively engaged in teaching, are studying with a view to improving their

professional status. In both cases the books are being returned regularly and in good order. Taking this as an example it might fairly be assumed that there are many others who would avail themselves of the benefits of the Library to advance their educational standing if they but knew that some of the necessary books could be obtained from its shelves. Of course no Reference Books are allowed to be taken from the Library.

My last year's Report gave a list of the Educational works and their Authors which were added to the Library; this year a similar list is given.

Number of Books loaned, 1897-1906:

Books given out in the month of—	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906
January	699	608	484	526	518	542	587	673	646	714
February	1,370	928	868	948	1,124	959	1,036	970	848	877
March	1,702	1,393	1,158	1,454	1,563	1,084	1,538	978	777	1,042
April	1,111	882	848	766	997	1,187	899	854	497	578
May	923	969	895	911	867	832	901	738	723	853
June	609	677	518	540	576	510	591	482	317	319
July	254	265	256	231	317	336	168	220	296	314
August	184	233	329	224	176	233	152	259	260	203
September	514	410	489	432	411	538	476	378	446	401
October	1,200	1,043	1,018	1,312	1,058	958	761	776	661	616
November	1,099	1,024	1,034	1,229	1,014	1,158	687	900	962	776
December	704	464	549	547	516	535	600	480	475	485
Totals	10,369	8,896	8,446	9,120	9,137	8,872	8,396	7,708	6,908	7,208

Number and Subjects of the Books Purchased in the Years 1897-1906:

Year.	Volumes.	Subjects.
1897	476	
1898	533	
1899	315	Education.
1900	275	Science.
1901	164	Literature.
1902	304	Art.
1903	218	Text-books.
1904	409	Miscellaneous
1905	486	
1906	548	

Regarding the books purchased during 1906 the largest increase is in fiction, which calls for a word or two of explanation. While I have no desire whatever to stimulate Novel reading in general, I consider that the reading of a good, well written story is wholesome mental recreation, and therefore think it reasonable that the standard works in the Department of Fiction should be available for the teachers in training who have little time at their disposal to visit the Public Library; besides most of them are strangers in the city, and hesitate to ask a mere casual acquaintance to stand sponsor for them for the safe return of the books. We have a fair supply of fiction on hand, and therefore with the usual supervision of the librarian and with ordinary care on the part of the borrower, there need be but few additions to this branch of the Library for some years to come.

The Number of Books Purchased in 1902-1906 was as follows:

Subjects.	1902	1903	1904	1905	1906
Pedagogy	40	7	18	30	22
Science (Political Economy, Anthropology, etc.)	11	3	10	32	17
Philosophy, Ethics and Religion	9	8	17	13	18
Industrial and Domestic Science	8	6	24	66	30
Poetry	1	10	13	5	16
Fiction and Practical Life	9	19	79	37	198
Literature	46	35	92	70	11
Text-Books	45	27	37	84	70
Miscellaneous (History, Biography, Reference Works)	102	61	84	119	119
Natural History and Nature Study	33	27	20	25	28
Arts	.....	15	15	5	19
Totals	304	218	409	486	548

As to the number of books donated to the Library during the past year it will be seen there is a decided increase in Text-books. This is owing to the gift of 292 books by The Macmillan Co. of Canada, Limited, 27 Richmond St. West, Toronto. The subjects dealt with in these Texts include History, Geography, Nature Study, Grammar and Composition, Science, Manual Arts and Domestic Science, English Classics, annotated, and a valuable collection of Texts on methods and Aids for Teachers in the teaching of Mathematics, Geography, History, Language, Science, etc.

The above Firm as Agents for Messrs. Adam and Charles Black have added to the latter firm's publications some very interesting and instructive books.

Number of Books donated to the Library 1899-1906:

	1899	1900	1901	1902	1903	1904	1905	1906
Text-Books	74	65	111	41	144	349	95	326
Miscellaneous	.....	7	13	54	95	16	37	177
Totals	74	72	124	95	239	365	132	503

Newspapers and Magazines Received during the Years 1900-1906:

	1901	1902	1903	1904	1905	1906
Number of daily and weekly newspapers received	91	88	89	109	126	90
Number of magazines and other periodicals received	102	100	111	94	98	102
Totals	193	188	200	203	224	192

The noticeable increase in the number of books, magazines, etc., bound during the year is thus accounted for: For more than twelve months I have been endeavoring to complete broken volumes of Educational Journals, Reports, and Magazines and am glad to say that I have been successful beyond my expectations. The work has entailed a great deal of correspondence, but the result fully warrants all the trouble involved. The gentlemen with whom I corresponded sent me most courteous replies and where pos-

sible the Reports, etc., were forwarded. The Library has now added to its shelves the following Reports complete and bound, in addition to Educational Journals and Magazines:

Reports, Toronto Public Schools, 1850 to 1904.

Reports, Dominion Educational Association, 1892 to 1904.

Reports, Ontario Educational Association, 1865 to 1906.

Reports on Education for Quebec, New Brunswick, Nova Scotia, Prince Edward Island and British Columbia.

Reports, Ontario Institution for Deaf and Dumb, 1871 to 1903.

Records of the Ontario Historical Society.

University of Toronto Monthly.

Addresses and Proceedings of National Teachers' Association, U. S., 1858 to 1905, with the exception of the proceedings of the 8th, 9th, 10th and 11th Annual Meetings, which I hope to get in a comparatively short time.

Books, Magazines, etc., Bound during the Years 1894-1906:

1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906
136	141	98	99	90	94	37	83	71	4	81	45	217

Official Reports on Education in different Countries received during 1902-1906:

	1902	1903	1904	1905	1906
Great Britain and Ireland	43	53	59	26	55
Various Provinces of the Dominion	42	45	31	31	34
Australasia—					
Victoria	5	3	2	4	2
New South Wales	3	.....	3	3	1
South Australia	1	1	1	.....	1
Western Australia	1	2	1	3	1
Queensland	.....	.....	2	1	1
Tasmania	1	.....	2	.....	1
New Zealand	29	18	26	10	17
Other British Possessions:					
Cape of Good Hope	1	2	2	1	1
Natal	1	1	1	2	1
Jamaica	1	1	1	1	1
Cape Town	.....	12	1	1	1
Barbadoes	1	1	1	1	.....
British Guiana	2	1	1	.....	.....
Newfoundland	.....	.....	.....	.....	1
Transvaal	.....	.....	1	1	.....
Various States of the American Union	54	81	65	55	97
Miscellaneous:					
Argentine Republic	12	10	2	3	1
Uruguay	.....	5	.....	2	1
France	8	4	2	2	4
Germany	.....	1	3	10	2
Portugal	2	2	1	2	.....
Switzerland	6	2	3	.....	.....
Italy	29	16	3	1	2
Mexico	1	.....	2	.....	.....
Japan	.....	2	1	.....	1
Totals	248	263	217	160	226

Miscellaneous Pamphlets Received in 1902-1906:

	1902	1903	1904	1905	1906
From various Countries	75	65	12	7	11
From the Dominion of Canada and its Provinces	74	53	27	46	31
Totals	149	118	39	53	42

Very little idea prevails as to the extent this Library is used by the teaching profession and the general public, and in order to bring this to your notice a record has been kept from day to day during the last ten months of the visitors, with the result shown in the following table. By far the larger portion of the callers consult the Reference works, of which the Library has a valuable collection, and these are being added to each year as the Legislative Grant permits.

Visitors Consulting Reference Books:

March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
759	441	765	481	875	984	1,202	936	746	356	7,545

Visitors taking out Books:

March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
676	365	553	190	206	77	287	411	477	182	3,424

In conclusion I beg to say that in spirit and purpose the Library of this Department should be a professional Library—a Library for Schools and Schoolmasters. Two things follow from this. In the first place the teacher and the School officer should have ready access to the shelves of the Library; this condition is already fulfilled. The shelves are open to any educationist in the Province. In the second place the shelves should meet the needs of the Educationists of the Province, and should reflect the best modern thought on all phases of school life and activity. As it is next to impossible for any one person to be familiar with everything that is written on pedagogics, I would suggest that a proposition be made to the Ontario Educational Association at their next annual meeting to nominate a Library Committee whose duty it shall be to submit each year a list of works on Education and of such text-books as in their opinion should have a place in the Library, leaving the acceptance or rejection of the books to the decision of the Librarian, subject to the final action of the Minister.

The following is a list of the books purchased during the past year:

PEDAGOGY.

The Human Nature Club, an introduction to the Study of Mental Life.
Notes on Child Study, by Edward Lee Thorndike.
How to Tell Stories to Children, by Sara Cone Bryant.
Great Pedagogical Essays, Plato to Spencer, by F. V. N. Painter.
The Teacher's Critic, and Mistakes in Teaching, by Jas. L. Hughes.
How to Secure and Retain Attention, by Jas. L. Hughes.
The Power of Play in Child Culture, by G. Hamilton Archibald.
Courses of Studies in the Eight Grades, by Charles A. McMurray, vols. 1 and 2.
Special Method in Elementary Science for the Common School, by Charles A. McMurray.
A Text-Book in the History of Education, by Paul Monroe.
The Philosophy of Education, by Herman Harrell Horne.
The German Universities and University Study, by Friedrich Paulsen, translated by F. Thilly and W. W. Elwang.
Elements of Psychology, by Edward L. Thorndike.
Psychology, by James R. Angell.
Physical Education, by A. MacLaren.
The Launching of a University, by D. C. Gilman.
Principles of Teaching, by Edward L. Thorndike.
A History of Higher Education in America, by Charles F. Thwing.
Among Country Schools, by O. J. Kern.
Citizenship and the Schools, by Jeremiah W. Jenks.

SCIENCE, POLITICAL ECONOMY, ANTHROPOLOGY, ETC.

Auditing: A Practical Manual for Auditors, by Lawrence R. Dicksee.
Accounting, in Theory and Practice, by George Lisle.
The Theory of Finance, by George King.
Elements of Political Economy, by James Bonar.
The History of Commerce in Europe, by H. de B. Gibbons.
Western Civilization, by Benjamin Kidd.
Success Among Nations, by Emil Reich.
The Microscope, an introduction to Microscopic Methods and to Histology, by Simon Henry Gage.
Volcanoes, their Structure and Significance, by T. G. Bonney.
The Stars, A Study of the Universe, by Simon Newcombe.
Principles of Sanitary Science and the Public Health, by Wm. T. Sedgwick.
The Euahlayi Tribe, a Study of Aboriginal Life in Australia, by K. Langloh Parker.
Origin of the Anglo-Saxon Race, by Thomas William Shore.
First Empire Number of the Engineering Review, London, Eng., July, 1906.

SCIENCE, POLITICAL ECONOMY, ANTHROPOLOGY, ETC.

The Origin of Species, by Means of Natural Selection, etc., by Charles Darwin.
Canadian Nationality, The Cry of Labor and other Essays, by W. Frank Hathaway.

PHILOSOPHY, ETHICS AND RELIGION.

The Two Babylons, by Rev. Alexander Hislop.
Plain Talks on Health and Morals, by C. C. Casselman and Rev. W. W. Walker.
Bible Stories, Old Testament.
Bible Stories, New Testament, by Richard G. Moulton.
Ethical Addresses, Lectures given before the American Ethical Societies. 12 vols.

INDUSTRIAL AND DOMESTIC SCIENCE.

The Care of the Child in Health, by Nathan Oppenheim.
Nelson's New Drawing Teacher's Handbook, by J. Vaughan.
A Manual of Clay Modelling, by Mary L. H. Unwin.
Geometrical Drawing and Design, by J. Humphrey Spanton.
The Art of Shading, by William Mann.
Light, Shade and Shadow, from Model Casts with introductory Model Drawing, by John Skeaping.

The Art Crafts for Beginners, by Frank G. Sanford.
Industrial Work for Public Schools, by Martha A. Holton and Alice F. Rollins.
Elementary Brush-Work Studies by Elizabeth Corbet Yeats.
Food and the Principles of Dietetics, by Robert Hutchinson.
Diet in Sickness and in Health, by Mrs. Ernest Hart.
Home Economics, by Maria Parloa.
Home Nursing, by Eveleen Harrison.
How to Feed Children, by Louise E. Hogan.
The Story of the Living Machine, by H. W. Conn.
The Hostess of To-Day, by Linda Hull Larned.
Practical Cooking and Serving, by Janet Mackenzie Hill.
Diets for Infants and Children in Health and Disease, by Louis Starr.
The Care of Children, by Elizabeth Robinson Scovil.
A Hand-Book of Invalid Cooking, by Mary A. Boland.
Elements of the Theory and Practice of Cookery, by Mary E. Williams and Catharine Rolston Fisher.
The Cost of Living as Modified by Sanitary Science, by Ellen H. Richards.
The Duties of Women, a course of Lectures by Frances Power Cobbe.
The Care and Feeding of Children, by L. Emmett Holt.
The Chemistry of Cooking and Cleaning, by Ellen H. Richards and S. Maria Elliott.
Surgical Emergencies, by Paul Swain.
The Laws of Health, by David Nabarro.
Problems in Furniture Making, by Fred. D. Crawshaw.
Plaster Casts and How they are Made, by Frank Forrest Frederick.

Poetry.

The Collected Poems of Isabella Valancy Crawford, by J. W. Garwin.
The Collected Poems of Wilfred Campbell.
The Poetical Works of Francis Ridley Havergal.
Lord Tennyson's Poetical Works, with notes, 10 vols.
In Memoriam, annotated by the Author.
Select Poems, Coleridge and Wordsworth, edited by W. J. Alexander, 1906.
The Golden Treasury of Songs and Lyrics, by Francis T. Palgrave.

Fiction and Practical Life.

The Evolution of Dodd, by William Hawley Smith.
The Complete Works of Louisa Mühlbach, 20 vols.
The Works of Sir Gilbert Parker, 14 vols.
The Works of Robert Louis Stevenson, 30 vols.
The Works of George Macdonald, 32 vols.
F. Marion Crawford's Works, 35 vols.
L. N. Tolstoi's complete Works, 24 vols.
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Nancy Stair, by Elinor Macartney Lane.
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Literature.

Tennyson, His Art and Relation to Modern Life, by Stopford A. Brooke.
Essays, by George Brimley and Wm. George Clark.
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The Works of William Shakespeare, edited by William Craig.
Modern English Literature, by Edmund Gosse.
A Browning Primer, by Esther Phoebe Defries.
Wordsworth's Literary Criticism, edited with an introduction by Nowell C. Smith.
Literature, its Principles and Problems, by Theodore Hunt.
Epochs of English Literature, by J. C. Stobart: Vol. 1, The Chaucer Epoch; Vol. 2, The Spenser Epoch; Vol. 3, The Shakespeare Epoch, 3 vols.

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Canadian Standard Book-Keeping, by Westervelt, Brooks, *et al.*
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Pitman's Shorthand Instructor, a complete exposition of Sir Isaac Pitman's System.
The Canadian Accountant, by S. G. Beatty and J. W. Johnson.
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Teacher's Handbook, Tonic Sol-Fa System of Music, by A. T. Cringan, 2 copies.
Type Lessons for Primary Teachers in the Study of Nature, Literature and Art, by Anna E. McGovern.
Occupations for Little Fingers, a Manual for Grade Teachers, etc., by E. Sage and A. M. Cooley.
Principles of General Grammar, by J. Roemer.
Modern Gymnastic Exercises, by A. Alexander.
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Conversations on Chemistry, by W. Ostwold and Elizabeth Catharine Ramsay.
A Historical Geography of the British Empire, by Hereford B. George.
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Taylor's Elementary Arithmetic.
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Elementary Algebra for the Higher Grades and Secondary Schools, by P. Ross.

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Ontario Assignments Act, with notes by R. S. Cassells.
Proceedings of the National Educational Association for 1905, also Year Book 1905-6.
Burke's Peerage, Baronetage and Knightage, 1905.
Burke's Landed Gentry of Ireland, 1904.
Burke's Landed Gentry of Great Britain, 1900.
Canadian Almanac for 1906.
Who's Who, 1906, by A. and C. Black, London, Eng.
Makers of Canada, John Graves Simcoe, by Duncan C. Scott.
Shifting Scenes, or Memories of Many Men in Many Lands, by Sir Edward Malet.
New France and New England, by John Fiske
Russia, by Sir Donald Mackenzie Wallace.
Studies of a Biographer, by Leslie Stephen, 4 vols.
All the Russias, Travels, Studies, etc., by Henry Norman.
Women and Men of the French Renaissance, by Edith Sichel.
Murray's New Oxford Dictionary, parts of vols. 6, 7 and 8.
The Concise Imperial Dictionary, by Charles Annandale.
John Boyle O'Reilly, His Life, Poems and Speeches, by James Jeffrey Roche, 2 vols.
Ballads, Critical Reviews, Tales, etc., by William Makepeace Thackeray, with Life of the Author, by Leslie Stephen.
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The Land of the Pigmies, by Captain Guy Burrows, with introduction by H. M. Stanley.
The English Dialect Dictionary, edited by Joseph Wright, 6 vols.
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A Greek-English Lexicon, by Henry George Liddell and Robert Scott.
Whittaker's Almanac for 1906.
The Story of the Canadian People, Ontario Edition, by David M. Duncan, 2 copies.

The Saint Lawrence, its Basin and Border Lands, by Samuel Edward Dawson.
Review of Historical Publications Relating to Canada, by G. M. Wrong and H. H. Langton. Vol. 10, 1905.
Records of the Past, by Rev. Henry Mason Baum and Frederick Bennet Wright. 4 vols.
Report on Secondary Education in Birkenhead, by Michael E. Sadler.
Le Morte D'Arthur, Sir Thomas Mallory's Book of King Arthur and of His Noble Knights of the Round Table. Vols. I. and II.
Year Book, Council of Supervisors of the Manual Arts, 1901, 1903, 1904, 1905, 4 vols.
The Siege of the South Pole, by Hugh Robert Mill.
Memoirs of Napoleon Bonaparte, by L. A. F. de Bourrienne, 4 vols.
The Development of the Sunday School, 1780-1905. Official Report of the 11th International Sunday School Convention, Toronto, Canada, 1905.
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Torontonensis for 1906.
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Memoirs of the Northern Kingdom, written A. D. 1872, by Rev. Wm. Jahnsenykes.
Anthropophagy, by Charles W. Darling.
Interesting Correspondence between His Excellency Governor Sullivan and Colonel Pickering, in which the latter vindicates himself.
An Examination of the Conduct of Great Britain respecting Neutrals since the year 1791.
Further and Still More Suppressed Documents regarding the Decrees of France respecting Commerce.
Annual Report of the Commissioner of Education at Washington, U. S., 1904. 2 vols.
Record of the 9th Jubilee of the University of Glasgow, 1451-1901.
The Book of Jubilee, In Commemoration of the 9th Jubilee of the University of Glasgow, 1451-1901, by Earl Rosebery.
Stonehenge and Other British Stone Monuments, astronomically considered by Sir Norman Lockyer.
Documentary History of Education, Upper Canada, by Dr. J. George Hodgins, vols. 14 and 15.
The Life of Froude, by Herbert Paul.
Cyclopedia of American Horticulture, by L. H. Bailey, 4 vols.
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The Statesman's Year Book, 1906.
The History of Methodism, by John Fletcher Hurst, 7 vols.
Thomas Carlyle, a History of the First Forty Years of His Life, 1795-1835, by James Anthony Froude. Vols. I. and II.
Reference Catalogue of Current Literature, by J. Whittaker & Sons. Vols. I. and II. A to Z, 1906.
The United States Catalogue of Books published 1902-1905, by Marion E. Potter.
Life and Letters of Lord Durham, by Stuart Reid.
Latin-English Dictionary, by Sir William Smith.
Hunter's Panoramic Guide from Niagara Falls to Quebec, by Wm. S. Hunter, Jr.
Dictionary of Quotations from Ancient and Modern English and Foreign Sources, by Rev. James Wood.

Natural History and Nature Study.

Butterflies and Moths of the Country Side, by F. Edward Hulme.
The Tree Book, a Popular Guide to the Trees of North America, by Julia Ellen Rogers.
Stories from Natural History, by Richard Wagner.
The Living Plant in Leaf, Flower and Fruit, by Alfred Ernest Wright and Edmund Step.
Experiments with Plants, by W. J. V. Osterhout.
Birds and Bees, Essays by John Burroughs, 2 copies.
Journal of Researches into the Natural History and Geology of the Countries visited by H. M. S. Bogle, on Her Voyage Round the World, by Charles Darwin.
Peeps into Nature's Ways, Chapters on Insect, Plant and Minute Life, by John J. Ward.
The Uses and Wonders of Plant Hairs, by Kate E. Styan.

Nature Through the Microscope and Camera, by Richard Kerr.
The Story of Germ Life, by W. H. Conn.
Manual of Mineralogy and Petrography, by James D. Dana.
Coral and Coral Islands, by James D. Dana.
Mountain Wild Flowers of Canada, by Julia W. Henshaw.
The Teaching Botanist, by Wm. Ganong.
First Studies in Plant Life, by George Francis Atkinson.
Nature Study and Life, by Clifton F. Hodge.
Lessons with Plants, by L. H. Bailey.
Sea-Shore Life, by Alfred Gainsborough Mayer.
The Sea-Beach at Ebb-Tide, by Augusta Foote Arnold.
Tenants of an Old Farm, by Henry Christopher McCook.
The Variation of Animals and Plants under Domestication, by Charles Darwin. Vols. I. and II.
The Common Spiders of the United States, by James H. Emerton.
Seed Dispersal, by W. J. Beal.
First Principles of Agriculture, by Emmett S. Goff and D. D. Mayne, 2 copies.
Studies of Plant Life in Canada, by Catharine Parr Traill.
The Great World's Farm, by Selina Gage.

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Art-Life of William Morris Hunt, by Helen M. Knowlton.
Cyclopedia of Architecture in Italy, Greece and the Levant, by William P. P. Longfellow.
British Contemporary Artists, by Cosmo Monkhouse.
How to Study Pictures, by Charles H. Caffin.
A History of Architectural Development, by T. M. Simpson, Vol. 1.
The School Arts Book, by Henry T. Bailey, 5 vols.
The Amateur Artist, or Oil and Water Color Painting, by F. Delamotte.
A History of Architecture on the Comparative Method, by B. and B. F. Fletcher.
Masters in Art, a Series of Illustrated Monographs, 6 vols.

I have the honor to be,

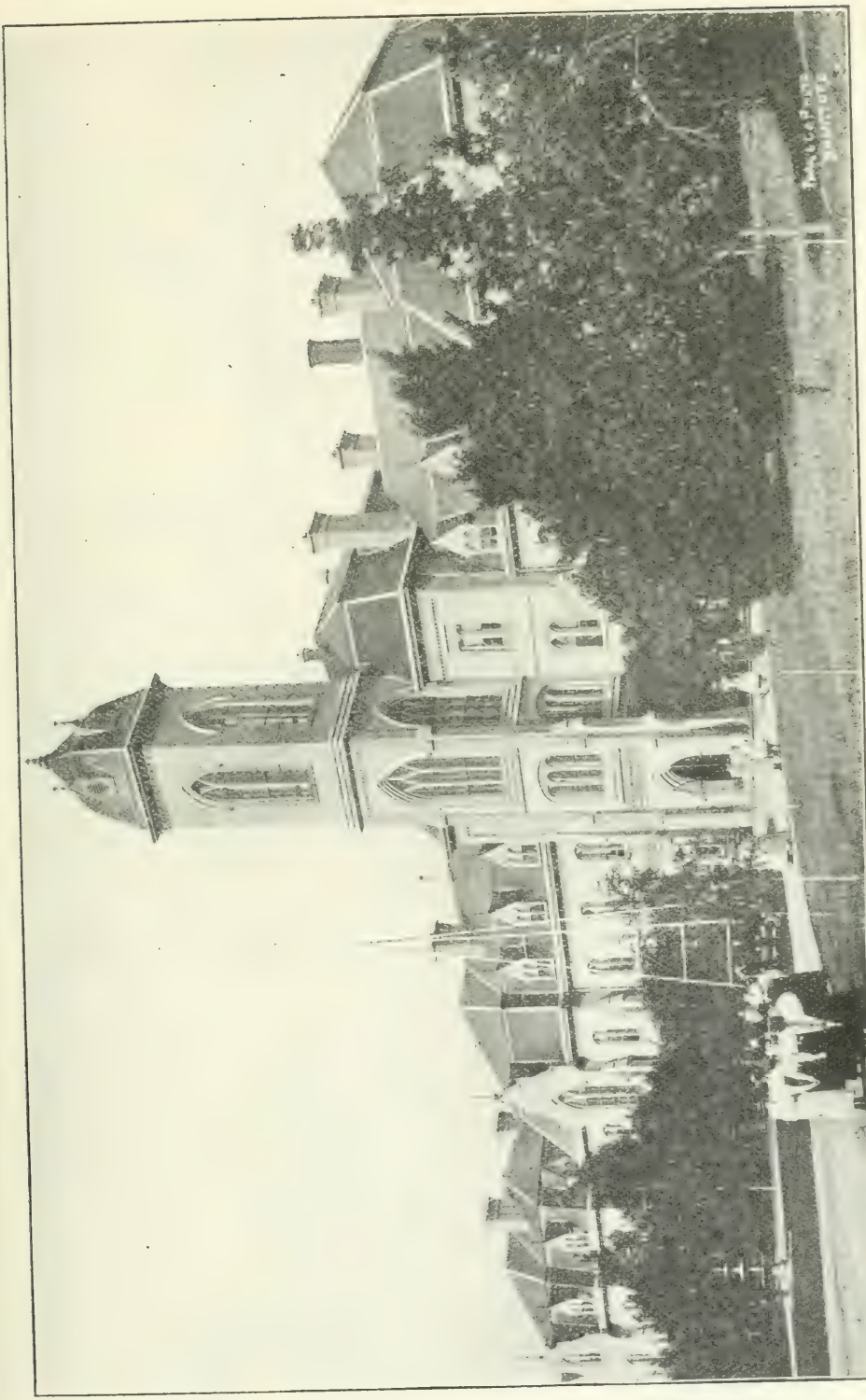
Sir,

Your obedient servant,

HENRY R. ALLEY,

Librarian.

TORONTO, December, 1906.



Institution for the Blind, Brantford.

APPENDIX J.—*THIRTY-FIFTH ANNUAL REPORT OF THE ONTARIO INSTITUTION FOR THE EDUCATION OF THE BLIND, BRANTFORD.*

BEING FOR THE YEAR ENDED 30TH SEPTEMBER, 1906.

HON. R. A. PYNE, M.D., LL.D., *Minister of Education*:

SIR,—I have the honor to transmit herewith the Thirty-fifth Annual Report upon the Institution for the Education and Instruction of the Blind, Brantford, for the year ended 30th September, 1906.

I have the honor to be,
Sir,
Your obedient servant,

H. F. GARDINER,
Principal.

BRANTFORD, October, 1906.

THE INSTITUTION FOR THE EDUCATION OF THE BLIND.

In presenting the thirty-fifth annual report of the Ontario Institution for the Education of the Blind, I have to record with gratitude that, during the scholastic year 1905-06, the teachers, officers and pupils were singularly free from serious illness, and the results of their joint labors were, therefore, eminently satisfactory. The reports of the literary and musical examiners, Messrs. Passmore and Fairclough respectively, which are appended to this report, indicate the character and extent of the work done in those departments, while the newspaper reports of the several entertainments given by, and to, the pupils, which are copied elsewhere, show something of the relations between the population of the Institution and the population of the city in which the Institution is located. The old tradition of "town and gown" is one of hostility, and there is a natural tendency for a body of students living within the walls of the same building to make a little world of their own, in which ignorance of the ways and ideas of the great world outside is a prominent feature. The tendency to isolation is more pronounced as between blind and sighted people than as between two sets of sighted people, yet I am happy to be able to say that the good people of Brantford have promptly and cordially responded to my every suggestion that the blind boys and girls would love them more if they knew them better. Church choirs and young people's societies have favored us with evening visits, and some families have been generous with their invitations to pupils to come to their homes. All these things help to break down the barrier of reserve, to remove awkwardness and prejudice, and to make the blind feel more at ease in the presence of those who can see.

The conduct of the pupils throughout the session has been, with hardly an exception, exemplary, and there was a decided improvement in the physical condition of the boys, due in great part to the persistence of the Supervisor in keeping them out of doors and on the move. The blind have a lower average of vitality than the seeing, and it is of the first importance

to give them the "maximum of health," without which they can neither study nor work to advantage. The paragraph on "Athletics" will show in greater detail what has been attempted and accomplished in this direction.

No expenditure of labor, or of money, will make a blind person as capable as that same person would be with sight, yet this fact, which one would expect to be obvious, is overlooked by many, who are disappointed that every youth who has attended a school for the blind is not self-supporting, and on the road to a competence. There are, in proportion to numbers, as many grades of intellect and of ability among the blind as among the seeing; the blind man who is moderately successful in business would probably be a "captain of industry" if he could see. What the sighted man, who can barely make a living, would do or be if he were blind, may be left to the imagination of the reader. I have taken some trouble to collect and arrange the evidence of experts on the problem of the blind, believing that the first step toward its solution is to enable the public to understand it.

The seeing boy does not leave school with a trade at his fingers' ends and the ability to earn a living; as a rule the beginning of his apprenticeship at a trade follows the end of his school life. The blind boy cannot take the same enjoyment out of sports and games as his sighted fellow, yet there are times after school hours when outdoor exercise is better for the blind boy than instruction in the workshop.

Applications for the admission of adults, who have lost their sight, as pupils in this Institution, continue to arrive, most of the applicants declaring a preference for a course in piano-tuning. Not many grown men are capable of becoming good piano tuners, and if that were otherwise, the finding of situations for any large number of tuners is difficult, if not impossible. The objections to having adults and children in the same school are stated elsewhere. Yet it would seem as if the case of the adult blind demands immediate attention. The proportion of blind adults to blind children of school age is as five or six to one. How, then, can a school for the children look after the adults as a side line?

Inspector Langmuir's reports of thirty years ago show that adults were first admitted because there was room to spare, the parents of blind children not being willing to allow them to leave home, and it was understood that as soon as the room was needed for children the adults would have to go out. Not much effort appears to have been made at that time to keep track of ex-pupils. Later, the circulating library caused considerable correspondence, yet the addresses of many ex-pupils were lost, and it is not now known whether some of them are dead or alive. I have prepared an alphabetical list of all the pupils who have attended the school since its opening in 1872, with such information about them as was obtainable from old members of the staff and other sources, and with this as a basis I hope to at least make an approach to the "Saxon System" which is described in these pages. Those who read carefully the statements made before the Royal Commission, at the Edinburgh Conference and at the Saginaw Convention, will understand that the youthful blind require something more than a course of literary, musical and industrial instruction in an institution like this. Those who are deprived of sight in adult life need even greater consideration, and when this is beginning to be admitted in other countries, Ontario will not deny the fact nor long neglect her duty.

The separation of the scholastic from the industrial work for the blind, and the separation of blind adults from blind children, seem to be de-

sirable, yet so long as there is only one Institution for the Blind in Ontario, and so long as even a few adults are enrolled among the pupils, industrial training cannot be wholly abandoned. The list of industries at which a blind man of average capacity can earn even a modest living is very brief. The occupations at which he can earn his board are not numerous. Yet it is much better for a blind man to be employed than for him to be idle, leaving the question of wages out of consideration. In England and in some of the States of America the adult blind are employed in workshops, run at an admitted loss, where the buying and the selling are done by people who can see, and where the wages actually earned are supplemented; in Germany and Scotland the blind are encouraged and assisted to work and do business on their own account. It will be for the Government and Legislature to determine, after a careful study of what has been done in other countries, and of the conditions which prevail in our own, which policy shall be pursued in Ontario. I quote the opinions of three leading educators of the blind in the United States:

Wm. B. Wait, for many years Superintendent of the New York City Institution for the Blind, writes:—

"The admission and instruction of adults and children in the same school is a subject of much importance. This practice can only be justified on the supposition that blindness, in some mysterious way, eliminates the difference that otherwise exists between adults and children, and brings them upon a common plane so that they mingle together, without detriment, in the close relationship which exists in a residential school. Blindness, however, has no such levelling effect, but, on the contrary, it strongly emphasizes the distinctions and incongruities that distinguish minors and adults. If adults are to be instructed, moral and social, no less than educational, considerations require that the work should be done in schools separate from those devoted to children.

"Closely related to the question last considered is that of industries or trades in connection with the school. The vocation of a skilled trade belongs to the period of maturity, and it follows that if adults are admitted to the school with minors, a strong inducement is at once furnished for the establishment of a trade school and manufacturing department, while, on the other hand, the existence of such a department opens the way for the admission of adults to be trained to work in it. There are as many adult females as males who are blind, and together they number approximately five times as many as the minor classes. The industrial feature, therefore, tends to become dominant, and unavoidably imparts an element of commercialism to the school so that money-getting becomes the chief desire of the adults, who accordingly prefer shopwork to the mental exercises and more strict discipline of the class room. This feeling is shared also by the younger pupils, and their interest is diverted from study and is directed towards earning money rather than towards mental development and the acquisition of knowledge.

"At the end of their term pupils will not be found to have either the means or the general qualifications necessary to begin business in the trade at which they have worked and to conduct it successfully against the competition of sight and machinery with which they must contend. A fairly good understanding of the situation will usually be gained by the pupils before the close of their school period, and at graduation they are likely to feel, not unnaturally, that they should be furnished with remunerative employment.

"The schools in Boston, Philadelphia and New York City have each had a long, trying and costly experience in this matter, due, no doubt, to the necessity, as it at first appeared, of following closely and persistently the course of their prototypes in Europe. The results in each of the three experiments are conclusive and may be summarized as follows:—

"It was found that the prime and essential work of education was subordinated to the conditions created and the demands made by the industries.

"The morals of the school were greatly impaired. The younger pupils were unduly influenced by the adults, whose mental attitudes, dispositions and physical habits were often taken up by the younger pupils, making them in greater or less degree the echoes and shadows of the older ones. Instead of a sense of self-reliance, there was developed a feeling of meritorious and, therefore, deserving dependence, which it was felt to be somebody's duty to recognize and provide for.

"Finally it became necessary to abandon the industrial experiment in order to save the institutions for the strictly educational work for which they were established.

"Looking to any lasting good conferred upon the pupils through the training in trades, by making them self-reliant and desirous to be self-supporting, the experiment was practically void of results.

"From the foregoing the conclusion is clear that trades or industries cannot be properly combined with ordinary educational work in a school of this kind. If trades are to be taught and industries are to be carried on, they should be taken up after school studies have been completed, and in a place far removed from the school proper."

George C. Morrison, Superintendent of the Maryland School for the Blind, writes:—"To sum up, I advocate the establishment and amplification of a workshop and distributing centre for the adult blind, the establishment of a department for blind women in some existing charitable home, and the establishment of a system of educating the blind in their homes similar to the one in force in Massachusetts. But no matter what is done, no part of the work for the adult blind should be joined in any way to the school work for blind children. There is no connection between the two, and only harm to the already established work will result from any effort to bring them together."

O. H. Bur[illegible] ndent of the New York State Institution for the Blind, Bata[illegible] ites:—"The State cannot, from a purely economic point of v[illegible] any later date the establishment of some kind of employment institutions for the adult blind. But why not extend the work of the schools for the blind to include some provisions for the adult blind, their work to be controlled by the same Board of Trustees and supervised and directed by the superintendents of these schools, thus avoiding the multiplication of institutions, the duplication of educational machinery, and the incurring of additional expense?

"I answer: There are several serious objections. As stated in the earlier part of this paper, the schools for the blind in their earlier days admitted blind persons of all ages, but experience has proven this plan to be an unwise one. Some of the strongest objections to it are:—

"First, adults are not easily and cheerfully amenable to the discipline which is necessary in the education of children and young people; and it is entirely natural and reasonable that they should not be.

"Second, the education of blind children and the management of a shop filled with adult laborers are two entirely different problems, either one of which is sufficiently difficult of solution to demand all the best thought of one superintendent.

"Third, the presence near a school of anything like a shop is a constant menace to the best work in our schools. Boys particularly are too eager to drop their studies and enter the shop, the strongest reason, I doubt not, being the ardent desire of the boy to be able to earn at as early a date as possible his own living and thus be independent.

"Fourth, for moral reasons adults and children of plastic years should not be brought into so close daily association as is necessary when both are housed under one roof.

"Fifth, the dietary of adults and that of growing children and youth should differ materially, and in most instances, at least, it is impracticable to maintain separate kitchens and dining rooms in the same institution. For these and similar reasons it is not practicable to develop these two distinct kinds of institutions in the same place and under precisely the same management."

So far as the Ontario institution is concerned, the extension or contraction of the industrial work is a question of expediency rather than a question of cost. The small boys and small girls take very kindly to bead work; the larger girls knit, crochet and sew, and some of them net hammocks; the boys cane chairs and net hammocks, cut and peel willow, and there is a pretty large class in piano tuning. Basket work has been done in the past, and it would be easy to revive it and to add broom making. For the accommodation of ex-pupils, stocks of willow and cane are kept on hand, and there are frequent orders for beads, wire, and other materials. But with a school population of juniors there is not much activity in the workshops until the middle of the afternoon, and few can become proficient with such limited practice.

I quoted in last year's report the argument of the late Mr. Anagnos, of Boston, in favor of the practical abandonment of handicrafts by the blind, and the preparation for professional and commercial life by means of higher education. This year I cite equally eminent testimony on behalf of what accords more closely with my own opinion, namely, that if the majority of the blind do not earn their living by handicrafts, they will not earn it at all.

So far, it has not been found practicable to sensibly increase the earnings of the blind in the face of the intense competition of the sighted; to reduce the cost of living is out of the question: how, then, shall the gap between earnings and requirements be bridged without damage to self-respect or temptation to idleness and pauperism? These are things for sympathizers with the blind to consider, and for this purpose a careful perusal of the following pages is invited.

Attendance.

The total registration of pupils in the session of 1905-06 was 123, as against 122 in the session of 1904-05; at the opening on September 27th, 1905, there were 107 pupils as compared with 104 at the opening of the preceding session; at the close 111, as compared with 107. Of the twelve pupils who were present during a part of the session, but did not remain until the end, one (male) was homesick and only stayed a few days, two

(males) were indisposed to work, one (male) was taken home because his friends found they could not bear separation from him, two (males) left when their parents removed from the Province, two (males) went away to obtain employment as piano tuners, one (male) went home to have his eyes treated, one (female) went to a specialist for the same purpose near the end of the session and did not return, and two (females) went home ill.

Of the 111 pupils who were present at the end of the session, there were 52 males and 59 females.

The number of pupils in attendance at the opening on September 26th, 1906, was 110, as compared with 107 at the corresponding date in 1905, and 111 at the closing of the school term on June 20th, 1906. Of those in attendance at the end of the last term, 84 had returned, five former pupils, who were not here at the close of last term, had come back, and twenty-one new pupils had been enrolled. The absence of the twenty-seven who had not returned is thus explained:—

Graduated.	Male.	Female.	Total.
In piano-tuning	4	0	4
In music (Artists' Diploma A. T. C. M.)	0	2	2
In industrial work	0	1	1
Other Causes.			
Recovered sight in one eye	1	0	1
Domestic requirements	2	2	4
To learn a trade	0	1	1
Poor health	0	2	2
Married during vacation	0	1	1
Removed from Ontario	0	2	2
To study music elsewhere	0	2	2
Temporary detention	2	5	7
	9	18	27

Of those classified as temporarily detained, three (females) arrived on October 1st, and one new pupil (male) was enrolled on the same day, bringing the number in attendance up to 114.

The ages of the new pupils are as follows:—

Males.		Females.	
Twenty-five years	1	Twenty-one years	1
Fifteen years	1	Twenty years	2
Fourteen years	1	Ninteen years	1
Thirteen years	1	Fifteen years	1
Twelve years	3	Thirteen years	2
Ten years	1	Eleven years	1
Nine years	2	Ten years	2
Seven years	1	Eight years	1
Five years	1	Seven years	1
	12	Six years	2
			14
			12
			26

The total registration in the official year, October 1st, 1905, to September 30th, 1906, was 147—71 males and 76 females—against 141 in the preceding official year.

Pupils Registered in Session 1905-06.

Name.	Residence.
Allison, Cameron	Vankleek Hill.
Boudreault, Joseph	Ottawa.
Brimacombe, James	Victoria Harbor.
Burgess, Lloyd	Princeton.
Carnrite, Claude	Ameliasburg.
Chatelain, Jean	L'Orignal.
Clark, James	Woodstock.
Clarke, Walter	Toronto.
Clemmett, Wilbert	Omemee.
Colby, Edward	Stratford.
Cook, Albert	Rosseau.
Crew, William	Toronto.
Daniel, Ovila	Dover South.
Duff, Charles	Banda.
Elnor, Harold	Toronto.
Fall, Albert	Toronto.
Fenton, Mills	Allenford.
Ferguson, John	Ophir.
Frayne, Orville	Forest.
Goldie, Roy	Sarnia.
Graham, David	Birnam.
Graham, Glen	Birnam.
Hawken, Howard	Whitby.
Henderson, Richard	Ancaster.
Hughes, John	Sudbury.
Jackson, Alfred	Brantford.
Johnston, Harold	Brockville.
Kelland, Wilber	Kirkton.
Kennedy, Thomas	Guelph.
Lavender, Charles	Dundas.
L'Heureux, Charles	Windsor.
Lott, Albert	Brussels.
Marcotte, Cleophose	Mattawa.
McBride, Charles	Toronto.
McDonald, John	Alexandria.
McDonald, Norman	Wingham.
McKinnon, Neil	Hamilton.
Mealing, Oliver	Brantford.
Nicolson, John	Dunn's Valley.
Porte, Aquila	Aylmer.
Pride, Frank	Monkton.
Purser, John	Cobourg.
Rahmel, Harry	Berlin.
Raymond, Walter	Davisville.
Ritzer, Michael	Windsor.
Sager, Floyd	Peterborough.
Saunders, Bruce	Brantford.
Shillington, Lloyd	Blenheim.
Simpson, Edward	Toronto.
Skinkle, George	Warkworth.
Stokes, George	Terra Cotta.
Thomas, Leslie	Branchton.
Thompson, William	Ottawa.
Thompson, Wm. G	Toronto.
Treneer, Herbert	Kingston.
Valiant, Horace	Toronto.
Watson, Aitken	Burford.
White, Harry	Toronto.
Wisner, William	Schomberg.
Wooley, Roy	Springfield.
Yarocki, Harry	Garland, Man.
Amyotte, Malvina	Bonfield.
Baldwin, Vashti	Niagara Falls.
Barr, Janet	Ancaster.
Branston, Ethel	Hamilton.
Bullock, Eva	Woodstock.
Capps, Bertha	Toronto.
Catling, Nellie	Cockburn Island.
Coll, Gertrude	Toronto.
Conybeare, Nettie	Innerkip.
Cuneo, Mary	Toronto.
Curry, Catharine	Toronto.
Davidovitz, Esther	Hamilton.
Davison, Winifred	Griersville.
Dean, Mabel	Stratford.
Deschenes, Louise	Bonfield.
Elliott, Isabel	Elkhorn, Man.
Ferguson, Enie	Toronto.
Foster, Olive	Hamilton.
Fox, Irene	Walkerville.
Hall, Anna	Amherstburg.
Hepburn, Alice	Port Elgin.
Hepburn, Harriet	Port Elgin.
Houser, Edna	Toronto.
James, Gertrude	Waterford.
Johnston, Charlotte	Guelph.
Johnston, Eva	Strathburn.
Kaufman, Blanche	Ridgetown.
Kay, Grace	Brantford.
Kight, Grace	Kemptville.
Lawrie, Caroline	Oakdale.
Leonard, Lily	Toronto.
Liggett, Margaret	Indian Head, Sask.
Liggett, Sarah	Indian Head, Sask.
Macdonald, Mary	Hamilton.
Marsh, Mary	Holland Landing.
McCannan, Beatrice	Kenora.
McLeod, Lily	Webbwood.
McNutt, Ella	Warsaw.
McPhater, Jessie	Clyde.
McQuade, Ethel	Stratford.
McRae, Mary	Toronto.
Miles, Mildred	Toronto.
O'Brien, Elizabeth	Toronto.
O'Reilly, Edith	Ottawa.
Patterson, Alma	Brantford,
Ponting, Hester	Courtland.
Prosser, Angelina	Toronto.
Rennie, Lulu	Toronto.
Rooke, Emma	Dereham Centre
Sage, Edna	Fanshawe.
Spicknell, Letitia	London Junction.
Sprengel, Marie	Harrow.
Squair, Ethel	Williamstown.
Stevens, Ethel	Peterborough.
Stickley, Alice	Toronto.
Swetman, Maud	Tillsonburg.
Thompson, Gladys	Toronto.
Thompson, Teresa	Hamilton.
Thomson, Anna V.	Ottawa.
Wilcox, Catharine	Toronto.
Wolsey, Esta	Toronto.
Wooldridge, Eleanor	Palmerston.

New Pupils at Opening of Session, 1906-07.

Name.	Residence.
John Cartwright	Toronto.
William Crew (re-admitted)	Toronto.
John Cundy	Arcola, Sask.
Byron Derbyshire	Athens.
Ludger Gagne	Bonfield.
Gustav Golz	Beausejour, Man.
Walter Harvey	Toronto.
Thomas Higgins	Toronto.
Leslie Ross	French, Sask.
Leonard Sherman	Fernie, B.C.
Francis Vance	Toronto.
Lionel West	Galt.
Clifford Patterson (Oct. 1st)	Dundas.
Gladys Bickerton	Navan.
Margueret Doherty	Peterborough.
Margaret Donaldson (re-admitted)	Lanark.
Eva Duciaume	Rockland.
Doris Hawley	Winnipeg, Man.
Gertrude Heimrich	Berlin.
Helen McPherson	Arkona.
Eva Muntz	Vegreville, Alberta
Pearl Nevin (re-admitted)	Trent Bridge.
Ruby Reamsbottom	Haileybury.
Kathryn Sells	Mitchell.
Laura Smith (re-admitted)	Dorchester.
Muriel Stephenson	Collingwood.
Ethel Stevens (re-admitted)	Peterborough.

Publicity.

Early in the summer vacation I sent the following letter to five hundred Ontario newspapers, and I have to thank a very large proportion of the editors of those papers for inserting it, thus helping me materially in the difficult task of locating the blind children of the Province:—

THE SCHOOL FOR THE BLIND AT BRANTFORD.

To the Editor of *The*

Dear Sir,—I ask your assistance to enable me to get into communication with the parents or guardians of all the blind children in Ontario, under the age of twenty-one years. The Institution for the Education and Instruction of the Blind, maintained by the Ontario Legislature, admits as pupils "all blind youths, of both sexes, between the ages of seven and twenty-one, not being deficient in intellect, and free from disease or physical infirmity, being residents of the Province of Ontario." It is not necessary that the applicant shall be totally blind; the test is inability to "read ordinary type and attend a school for the seeing without serious injury to the sight." The initial difficulty is to locate the children who are eligible for admission, and it will be helpful in the future if your readers will send me the names and addresses of blind children under seven, as well as of those between seven and twenty-one.

Should you favor me by the publication of this letter, I would ask your readers not to depend upon the parents of the children with defective sight to attend to this matter. If all could witness the gain in health, happiness, knowledge and self-reliance that comes to those who, deprived by their affliction of access to the public schools, take advantage of the educational facilities afforded by this institution, none would grudge the time and trouble required to widen the scope of the school's influence. Send me the names and addresses, and I will by correspondence or visitation do the rest.

H. F. Gardiner,
Principal O. I. B.

Brantford, July 20th, 1906.

Now that the Annual Report of this Institution is appended to the Annual Report of the Minister of Education, the work done here will become better known to the hundreds of teachers of the High Schools and Public Schools who receive the Minister's Report, and children whose sight is so defective as to place them at a serious disadvantage in the ordinary school will be advised by the teachers to apply for admission to this Institution. Teachers are invited to visit the Institution when convenient and to write whenever they desire any information concerning the Institution and its work.

Writing.

The typewriter is still used by some of the pupils for their correspondence, but they are strongly advised to cultivate pencil writing with the grooved card as the system which will be of most practical use to them after leaving school. For their school work (taking notes, writing music, etc.) and for correspondence with one another, the blind make great use of the point print, which they can both read and write, and in which many of the newest books are printed. The letters are easily learned, and the dots are better adapted for finger reading than embossed letters are.

NEW YORK POINT ALPHABET.

Capitals :—A ⠁ B ⠃ C ⠉ D ⠙ E ⠑ F ⠋ G ⠛ H ⠓ I ⠊ J ⠚ K ⠅ L ⠇ M ⠍ N ⠝ O ⠕ P ⠏ Q ⠟ R ⠗ S ⠎ T ⠞ U ⠥ V ⠧ W ⠺ X ⠭ Y ⠽ Z ⠵

a ⠁ b ⠃ c ⠉ d ⠙ e ⠑ f ⠋ g ⠛ h ⠓ i ⠊ j ⠚ k ⠅ l ⠇ m ⠍ n ⠝ o ⠕ p ⠏ q ⠟ r ⠗ s ⠎ t ⠞ u ⠥ v ⠧ w ⠺ x ⠭ y ⠽ z ⠵ Number sign ⠼ Numerals 1 ⠁ 2 ⠃ 3 ⠉ 4 ⠙ 5 ⠑ 6 ⠋ 7 ⠛ 8 ⠓ 9 ⠊ 0 ⠚ Word and part word signs the ⠮ and ⠯ of ⠷ that ⠾ ing ⠬ ch ⠡ ou ⠳ sh ⠩ th ⠹ wh ⠱ ph ⠫ gh ⠣

Punctuation Marks :—Comma ⠂ Semi-colon ⠆ Colon ⠒ Interrogation ⠦ Dash ⠤ Period ⠲ Exclamation ⠖ Parenthesis ⠶ Quotation ⠦⠴ Apostrophe ⠄ Hyphen ⠤

Domestic Science.

During the winter months a class in Domestic Science is taught by Miss Lee, but the necessities of space limit the number in this class to six. Miss Lee reports:—

Mr. H. F. Gardiner, *Principal O.I.B.*:

Sir,—During the past year much interest has been taken by the pupils of the Domestic Science class. Though they are younger on the whole than in former years, very fine work was accomplished, when one considers that the three youngest (two of them quite blind) had for the first time swept a floor, peeled a potato, or done any scrubbing, to say nothing of the numerous other important things connected with housekeeping.

One can naturally understand how a blind child is set aside in the home regarding the work of the house. It is the exception, and not the rule, when a blind girl is given an opportunity to help in any kind of housework in the home. They are usually made to feel that they are more of a hindrance than a help, when, if parents would stop to think that, in allowing their child to help, if it is ever so little each day, even though it does retard the work some, it would be such a benefit, for it is by constant practice that one acquires any knowledge worth having.

The class in Domestic Science here helps a young girl to feel that she is not altogether useless, and it would be such a help to the teacher if the children were taught at home how, at least, to hold a broom. Let them sweep the sidewalk or the back yard, if it is thought they would be in the way in the house. Then give them the steps or porch to scrub, if nothing else, for the exercise alone is very beneficial to a blind child.

The very youngest children are taught here to make their beds and keep their rooms neat and orderly, so that when the girls enter the Domestic Science class they do not find it so hard to learn to keep the kitchen in perfect order. They learn the proper method of dish-washing, how to take care of a sink, how to keep a stove clean, and to have a place for everything and everything in its place, that is, the kitchen must be as clean and orderly when a class leaves it as when it was entered.

During the year the pupils were given lessons in the theory of food economy, nutrition, etc., showing which are the most healthful and, therefore, the cheapest foods to use; also, on the quantity of food required according to climate, seasons, clothing, age, sex, etc.

They were also given lessons in the theory of cookery, showing the different methods used and the reason for each, such as how to put the ingredients for a cake together properly, how to weigh and measure, how to stir, beat and cut, fold or lift.

In their theory they were also given time-tables in cooking, such as the length of time it should take to boil vegetables, coffee, meats, fish, etc. In the broiling of meats, etc., and the baking of bread, cakes, pastry, puddings, meats and fowls, they were similarly instructed.

Afterwards they were given an opportunity to put their theory into practice, when they were taught how to make dishes for the different meals in a day, besides learning how to economize by turning the left-overs of meals into a tasty dish.

Among the things they cooked this year were foaming omelets, poached eggs on toast, vegetables, soups, pastry, puddings, biscuits, cookies, cakes, scalloped dishes and croquettes.

On theory days the recipes for these different dishes, as well as numerous other recipes are taken down in point print, to be stored up for future use.

In this way the pupils have an opportunity of accumulating enough valuable information to make a good-sized cook-book.

I have the honor to be, Sir,

Your obedient servant,

E. Lee.

I may add that the "cooking class" is popular among the girls, and I have had to refuse applications for admission to it every year. During the vacations I receive letters from the pupils' parents expressing their satisfaction with the results of their daughters' training in Domestic Science. It is a great point gained to have the girls find out how many things they can do when they try.

Hester Ponting, A.T.C.M.,
Graduated at O.I.B., 1906.

Mary Macdonald, A.T.C.M.,
Graduated at O.I.B., 1906.

Musical Instruction.

Sixty-two pupils were instructed in music during the session, most of whom were examined by Mr. Fairclough, as described in his report. The demand for music lessons always exceeds the appliances for supply. To engage another teacher, or to purchase more pianos, is a comparatively simple matter, but each piano requires a separate room, and when more than a score of rooms are devoted to teaching and practice, there is crowding in other departments, especially on the girls' side of the building, which is smaller than the boys' side.

In the extracts from the Reports of Commissions, Conferences and Conventions on the Blind, which will be found on other pages, are some interesting remarks on the propriety of teaching the blind music. One has to consider the pleasure given to the player, the pleasure given to others by the player, and the usefulness of musical instruction as a means of earning a livelihood. Under the latter head come the divisions of entertaining, teaching, composing and church-organ work. Mr. Fairclough in his report recommends more attention to solo singing, and there are several voices in the choral class which are worth cultivation on the lines he indicates. With the general work of the musical department the examiner expresses satisfaction, and the records of O. I. B. pupils at the Toronto College of Music examinations speak for themselves. Two young ladies, Misses Mary Macdonald and Hester Ponting, received the degree of Associate Toronto College of Music this year, their diplomas being presented at the closing concert in June, a report of which will be found under the head of Entertainments. Miss Macdonald has been appointed organist of a new Catholic Church in Hamilton, and her teachers and friends in the Institution have every confidence that she will succeed in that capacity. The Toronto *Globe*, of May 24th, 1906, contained the following reference to a performance in that city by Misses Ponting and Macdonald:—

"A very interesting graduation recital was given at the Toronto College of Music Tuesday evening by Misses Hester Ponting and Mary Macdonald of the Ontario Institution for the Blind, Brantford, assisted by Miss Eveline Ashworth, soprano, and Miss Olive Scholey, contralto, pupils of Dr. Torrington. The talent displayed by the young ladies in their piano selections was of a very high order, and they showed not only brilliance of technique, but a splendid intellectual grasp of the numbers performed. An array of pieces, including Beethoven's Appassionata Sonata, two of Schumann's 'Fantasie Stücke', Leschetizky's 'Mazurka,' Bach's 'Prelude and Fugue in B Flat,' Chopin's 'Ballade in A Flat,' and Batiste's 'Offertoire in D Minor' for the organ, served to exhibit a broad musical training and versatility of style. Miss Ashworth and Miss Scholey are two vocalists who should have a brilliant future, both possessing breadth of tone and facility of vocalization. Dr. Torrington, in a brief speech, complimented Mr. Ernest A. Humphries, musical director of the Institution for the Blind, upon the accomplishments of his pupils, and spoke in glowing terms of the Institution's noble work."

The following is a list of successful O. I. B. pupils in the Toronto College of Music examinations, May and June, 1906:—

Associate Toronto College of Music (A.T.C.M.):
Hester Ponting.
Mary Macdonald.
Third Year Piano:
Mary Macdonald (honors).

Second Year Piano:
Alice Stickley (first-class honors).
Thomas Kennedy (honors).
Grace Kay.
Gertrude Coll.

First Year Piano:
Eleanor Wooldridge (first-class honors).
Edward Simpson (first-class honors).
Horace Valiant (first-class honors).
Beatrice McCannan (first-class honors).
Margaret Liggett (honors).
Charles Lavender (honors).
Enie Ferguson (honors).

Second Year Counterpoint:
Grace Kay (first-class honors).
Mary Macdonald (first-class honors).
Grace Kight (first-class honors).
Herbert Treneer (first-class honors).

Second Year Written Harmony:
Grace Kay (first-class honors).
Grace Kight (honors).
Mary Macdonald.
Herbert Treneer.

First Year Written Harmony:
Victoria Thomson (first-class honors).
Alice Stickley (first-class honors).
Thomas Kennedy (first-class honors).
Gertrude Coll (first-class honors).
Eva Bullock.

Second Year Practical Harmony:
Grace Kight (first-class honors).
Mary Macdonald (first-class honors).
Herbert Treneer (first-class honors).
Grace Kay.

First Year Practical Harmony:
Alice Stickley (first-class honors).
Victoria Thomson (first-class honors).
Thomas Kennedy (honors).
Eva Bullock.
Gertrude Coll.

Second Year History of Music:
Mary Macdonald (first-class honors).
Grace Kay (first-class honors).
Grace Kight (first-class honors).
Herbert Treneer.

First Year History of Music:
Victoria Thomson (first-class honors).
Alice Stickley (first-class honors).
Gertrude Coll (first-class honors).
Eva Bullock (honors).
Thomas Kennedy.

Entertainments.

The entertainments during the session, for and by the pupils, were of a varied character. The city papers reported that "the pupils of the Institution for the Blind had an enjoyable time on the evening of October 31st (Hollowe'en), many of them taking part in an impromptu concert programme and the rest constituting the audience. The chair was occupied by Mr. P. Roney, one of the literary teachers, who performed the functions of his office with efficiency, while the performers, little and big, earned and received hearty applause. Among the specialties was a French song by Jean Chatelain, of L'Orignal, and a Musical Romance by Herbert Treneer and Charles Duff, the former of whom read a series of questions from a point-print sheet, which the latter answered on the piano, to the intense delight of the audience. The chorus by the Kindergarten class, and little Teresa Thompson's solos were received with much favor. At an intermission in the programme, candy and raisins were passed around by the matron and assistants."

On the afternoon of December 16th, the junior girls gave a concert in the Vocal Room, with Isabel Elliott in the chair, and they got through the following programme very nicely:—

1. Chorus—"Welcome."
2. Chairman's Address—Subject, "Christmas."
3. Recitation—Mildred Miles—"Bruce and the Spider."
4. Quintette—Blanche Kaufman, Vashti Baldwin, Marie Sprengel, Mary Cuneo, Ethel Squair—"Over Fields and Meadows."
5. Dialogue—Mildred Miles, Ethel Squair, Mary Marsh, Ethel Stevens—"Three Sisters and Santa Claus."
6. Recitation—Ethel Squair—"The Disobedient Mouse."
7. Song—Emma Rooke—"Two Little Boys."
8. Dialogue—Nine Girls—"Christmas Spirits."
9. Piano Solo—Beatrice McCannan.
10. Chorus—"The Dolls."
11. Recitation—Mary Cuneo—"The Six Turkeys."
12. Song—Isabel Elliott—"The Old House by the Linden."
13. Piano Solo—Beatrice McCannan.

Christmas Concert.

The Christmas Concert was held on the evening of December 21st, the newspaper reporting that "in spite of the inclement weather, the Music Hall at the Institution for the Blind was well filled, and as usual the entertainment provided was good and was highly appreciated. Promptly at eight o'clock Principal Gardiner called the audience to order, remarking that he accepted it as a compliment to himself, the teachers and the pupils that so many ladies and gentlemen had left their comfortable homes and braved the storm to attend the concert. The session so far had been a happy one, much good and useful work having been done, notwithstanding the handicap of illness among the teachers, which necessitated harder work on the part of those whose health had not been affected. He felt like complimenting the pupils on their industry and good conduct, and he would be abundantly satisfied if the same standard were maintained during the remainder of the session. . . . . .

"The programme consisted of organ and piano solos, two overtures and part songs by the Choral Class of some forty voices, interspersed with recitations. The opening number was the Batiste 'Offertoire in D. Minor' played on the organ by Miss Mary Macdonald, who showed that she had

splendid command of the instrument, and gave a very pleasing rendering of the difficult selection. The recitations were five in number and it was remarked that the Institution pupils were never heard to better advantage, clearness of enunciation being combined with an absence of over-natural expression and inflection, and each reciter was apparently appreciated by every listener. The little tots captured all hearts and gave a delightful account of themselves, little Miss Blanche Kaufman in 'Her Friend,' and Gladys Thompson with 'In Santa Claus' Land.' Miss Esta Wolsey had been assigned a difficult task, as her number, 'How the La Rue Stakes Were Lost,' required considerable elocutionary power. She succeeded admirably, however, and gave evidence of no small talent. Mr. Joseph Boudreault recited Drummond's 'The Habitant,' with an accent which comes to him from his own mother tongue, and he was certainly the right man in the right place. In Kipling's 'Ballad of East and West,' Mr. Thomas Kennedy told a thrilling soldier-adventure of the India frontier and gave it with splendid power and expression. The piano solosists showed that their training had been done with careful attention to technical detail and beauty of conception. Master Charles Duff is a rather small boy to show so much skill as a pianist, but his rendering of Chopin's 'Valse Op. 64, No. 2' and Sinding's 'Marche Grotesque' was quite charming and apparently well-nigh flawless. Miss Hester Ponting played the 'Witches' Dance,' by McDowell, in quite virtuoso fashion, and overcame the great technical difficulties with apparent ease.

"The choral class did not disappoint those who always look forward to their numbers, and sang three part songs with their well-known attention to shading and attack; special mention might be made of the good work done by the tenors and basses. The songs were 'The Crusader,' by Pinsuti; 'The Elfhorns,' by Bullard, and 'Queen of the Night,' by Gounod.

"Of the two overtures, the first, 'The Caliph of Bagdad,' by Boieldieu, was played on three pianos by Messrs. Herbert Treneer, Charles Duff, Thomas Kennedy, Albert Fall, George Skinkle and Cameron Allison, all of whom acquitted themselves splendidly. The second overture was that of Handel's 'Occasional Oratorio,' and was rendered on three pianos and the pipe organ, the players being Misses Victoria Thompson, Eva Bullock, Grace Kight, Eva Johnston, Alice Stickley and Louis Deschenes, with Miss Mary Macdonald at the organ. This number formed a splendid climax for a most pleasing programme and elicited great applause.

"It was explained that this concert was simply a Christmas 'entertainment,' and was not intended to be of the exacting character of the graduating exercises and closing, which come in the month of June. Last evening's programme was, however, of a most enjoyable nature from all standpoints, and was seemingly as great a delight to the performers as to the audience.

"The National Anthem was sung at a reasonably early hour, after which those participating enjoyed light refreshments in the dining room."

Christmas Tree.

For the pupils who could not go home for the holidays, on account of distance, a Christmas tree was prepared, laden with gifts and decorations, and the following programme was presented:—

1. Piano Solo—Louise Deschenes.
2. Recitation—Harriet Hepburn.
3. Song—Isabel Elliott.
4. Piano Solo—Irene Fox.
5. Recitation—Orville Frayne.

6. Song—Joseph Boudreault.
7. Piano Solo—Horace Valiant.
8. Recitation—Edna Houser.
9. Song and Chorus—Girls.
10. Recitation—Margaret Liggett.
11. Duet—Roy Goldie and Wilbert Clemmett.
12. Speech—John McDonald.
13. Song—Jean Chatelain.
14. Piano Solo—Leslie Thomas.
15. Mouth Organ Solo—Horace Valiant.
16. Recitation—Irene Fox.

The distribution of the presents on the tree followed.

At St. Jude's.

On the evening of February 12th, twenty pupils of the Institution, accompanied by the Principal, paid a visit to the Anglican Young People's Association of St. Jude's Church and gave a concert in the schoolroom, Mr. Gardiner presiding. The programme was:—

1. *Chopin*—Waltz, Op. 64, No. 2. Piano solo. Charles Duff.
2. *Trotere*—"The Deathless Army." Vocal solo. Thomas Kennedy.
3. *Deshayes*—"King of the Carnival"; *Bohm*—"La Grace" Waltz. Piano duet. Alice Stickley and Victoria Thomson.
4. *Havergal*—"The Ministry of Song." Recitation. Grace Kay.
5. *Chopin*—"Polonaise," Op. 26, No. 1. Piano solo. Herbert Treneer.
6. *Dr. Drummond*—"The Habitant." Recitation. Joseph Boudreault.
7. *Delahaye*—Minuet "Columbine." Piano Solo. Louise Deschenes.
8. *Tozer*—"By the River." Vocal duet. Grace Kight and Letitia Spicknell.
9. *Engelmann*—"Parade Review, Marche Militaire." Piano duet. Cameron Allison and Albert Fall.
10. *Braham*—"The Death of Nelson." Vocal solo. John Nicolson.
11. *Mendelssohn*—"Spinning Song." Piano solo. Mary Macdonald.
12. "Mr. Sandscript's Slide Down Hill." Recitation. Grace Kight.
13. Chorus—Hunting Song—Girls.
14. *Bela*—Lustspiel Overture. Piano duet. C. Duff and H. Treneer.

At the conclusion refreshments were served to the guests by the members of the Society, and a return visit was promised.

At Grace Church.

On Feb. 26th a similar visit was made to the Grace Church Society, the programme being as follows, with Mr. Wickens in the chair:—

1. *Chopin*—Nocturne. Piano solo. Gertrude Coll.
2. "The Wrong Woman." Recitation. Edna Sage.
3. *Stephen Adams*—"The Veteran." Vocal solo. Jos. Boudreault.
4. *Engelmann*—"Marche Militaire." Piano duet. Cameron Allison and Albert Fall.
5. *Tennyson*—"The Revenge." Recitation. Charles Lavender.
6. *De Koven*—"Winter Lullaby." Vocal solo. Hester Ponting.
7. *Donizetti*—"Lucrezia Borgia." Piano duet. Louise Deschenes and Grace Kight.
8. "The Relief of Lucknow." Recitation. Thomas Kennedy.
9. *Fairlamb*—"April Day." Chorus. Girls.
10. *Nevin*—"Venetian Love Song." Op. 20, No. 1; *Sinding*—"Marche Grotesque." Charles Duff.
11. "The Country Cousins." Dialogue. Grace Kight, Hester Ponting, Louise Deschenes and Maud Swetman.
12. *Vanderwater*—"The Prodigal." Vocal solo. John Nicolson.
13. "Children's Dream." Vocal duet. Grace Kight and Hester Ponting.
14. *Neidlinger*—"That Little Peach." Quartette. T. Kennedy, J. Nicolson, J. Boudreault and C. Lavender.
15. *Bela*—Lustspiel Overture. Piano duet. Charles Duff and Herbert Treneer.

A vote of thanks to the performers was moved by Rev. Dr. Mackenzie, after which refreshments were served.

A Gymnastic Exhibition.

The Brantford *Courier* of March 19th said: The boys at the Institution for the Blind are getting their muscle up. The other day seven of them, accompanied by Mr. Ramsay, the supervisor, walked from the Institution to the second bridge in Paris and back: time, 3 hours, 10 minutes. The distance must be over twelve miles, so the record is not bad for beginners. On Saturday forenoon between 30 and 40 of the public school boys, belonging to the Young Men's Christian Association, paid a visit to the O. I. B., and, under the direction of Mr. Frederick I. Grobb, gave an exhibition in the gymnasium. The visitors were very proficient in free gymnastics and mat work, while the Institution boys did better at apparatus work, going through their exercises on the horse, the parallels, the horizontal bar and the ladder. This was the first of a series of visits planned for the purpose of showing the members of each class what the others can do, with the moral of "Go thou and do likewise" in view. The seniors of the Y.M.C.A. are expected at the Institution soon. The blind boys gave three hearty cheers for their visitors. Mr. Grobb and Mr. Ramsay have both good reason to be proud of their pupils.

The Institution boys paid a return visit to the Y.M.C.A. on March 22nd.

Canada Club Debate.

The Brantford *Expositor* of March 30th said: The members of the Canada Club had a very pleasant outing last evening, when, on the invitation of Principal Gardiner, they held their regular debate in the assembly hall of the O.I.B. About twenty-five members of the club turned out and all the teachers and pupils of the Institution were present to listen to the debate. The subject was: "Resolved, that the franchise should be extended to women." The chair was taken by Mr. T. Durkee, who introduced the speakers in his usual happy manner. The affirmative was upheld by Messrs. T. McPhail, H. K. Jordan, J. R. Varey and Mangles, the negative being supported by Messrs. G. Pickles, F. Britton, A. Tomlinson and S. P. Davies. Some strong arguments were brought forth on both sides, the points being well defined and forcibly driven home. The judges, Miss Lee and Messrs. Ramsay and Boudreault, awarded the decision to the negative. A couple of organ selections were given by Mr. H. K. Jordan, and Mr. Gardiner then thanked the Club for the entertainment on behalf of himself and the pupils of the Institution. Refreshments were afterwards served for the members of the Club and a very enjoyable evening was brought to a close by singing "God Save the King."

Singers from the City.

The newspapers of April 24th reported that about thirty members of the Young People's Association of St. Jude's Church visited the Institution for the Blind last evening, to entertain the pupils with a concert. Rev. Mr. Wright, rector of the church, presided, and he kept the little folks on the front seats up to concert pitch by the occasional interpolation of an appropriate story. The programme was made up of vocal selections exclusively, a peculiarity which did not detract from its acceptability. Miss May Wright's solo, "When the Heart is Young," and her duet with Mr. Adams, "Come With Me," were suited to her fine voice, and Miss Carrie Williams won every heart with her rendering of "Dearie." She also sang "The Three

Wishes." Mr. Seace sang "The Mighty Deep" and "The Bandolero," Mr. Darby "The Holy City," and Mr. Adams "If I Were a Knight." Mr. Holrod sang "The Bedouin Love Song" and "Heroes and Gentleman," the latter being encored. A vote of thanks to the visitors was moved and seconded by two pupils, Thomas Kennedy and Joseph Boudreault, and was presented by the Principal, who suggested an adjournment to the Teachers' Parlor, where coffee and cake were served and a social half-hour was pleasantly spent. Such visits by the people of the city are highly appreciated by all connected with the Institution.

Brant Avenue Church Choir.

On May 18th there was another concert in the Music Hall, which was thus reported: Forty members of the choir of Brant Avenue Church, under the direction of Mr. Henri K. Jordan, contributed to the entertainment of the pupils of the Institution for the Blind last evening, and never were singers favored with a more appreciative audience. Among the soloists were Mr. R. Overend in "O Lord Correct Me," Miss B. Schmidlin in "The Swallows," Miss L. Elliott in "The Carnival," and Mr. R. W. Crooks in "Heroes and Gentlemen" and "If All the Young Maidens," all encored, and the choir rendered "Holy Art Thou," "Night" and "Hear, O Lord, When I Cry," with piano accompaniment, and "A Slumber Song" and "Hark, Hark, My Soul," unaccompanied. The men of the choir sang "My Love is Like a Red, Red Rose," and Miss Leone Park recited very acceptably. A social half-hour was spent by the visitors after the concert in the Teachers' Parlor.

June Closing Concert.

The closing concert was held on June 18th. It was reported as follows: Standing room was at a premium in the Music Hall of the Institution for the Blind last night, the attraction being the closing concert in connection with the end of the session. Soon after seven o'clock the people began to assemble, and when the doors were opened at eight there were more waiting than could possibly be accommodated. In spite of the discomfort, the hall remained crowded to the end, and all seemed to be pleased with the entertainment provided.

Principal Gardiner, in welcoming the audience, apologized for the absence of Mr. Colquhoun, Deputy Minister of Education, and of Mayor Waterous, who had been invited. He briefly outlined the work of the session, during which the total registration of pupils was 123. At the opening in September, 107 entered, and 16 more came in during the session. For various causes 12 left before the end of the session, leaving 111 in attendance. The main endeavors of the teachers were directed to giving all the pupils a good English education. But something was done in the way of accomplishments and in the industrial line. There were 62 pupils in music, 19 in piano tuning, 6 in domestic science, 20 in sewing, 41 in knitting and crocheting, 21 in cane chair seating, 5 in hammock netting, 51 in bead work and 17 in Latin. Mr. Gardiner said he liked to have the people of Brantford take a sort of proprietary interest in the Institution, but it was common to expect too much from the blind. Wonders were accomplished, but there were limitations. Let the men before him think how hard they had to work to support their families, and pay their debts, and how little they had left at the end of the year; then let them empty their pockets and shut their eyes and see how much they could earn, even with the advantages of knowledge, experience and acquired skill. That was the way to look at

Class in Vocal Music, O.I.B., 1906.

the case of the blind, and from that point of view he felt well pleased with accomplished results and with prospects for the future. He was glad to say that the health of the pupils had been good and their conduct exemplary. The conduct of the programme was handed over to Mr. Humphries.

The programme, which was carried out without loss of time, and with the greatest credit to all the performers, was undoubtedly one of the most enjoyable ever presented at an Institution concert. Former standards were well upheld, and in some particulars considerably exceeded; and, although comparisons are not always in order, it was a matter of general remark among those who observe the progress of the pupils from year to year, that the graduates in piano, Miss Ponting and Miss Macdonald, reached the highest point of excellence yet attained. The fact that this session two young ladies obtained the degree of Associate of the Toronto College of Music (A.T.C.M.) marks the breaking of all records in the musical history of the O. I. B., and must be a matter of sincere gratification to the Musical Director, Mr. Humphries, and his able assistants in that department. In addition to the graduates, 21 certificates of the Toronto College of Music were obtained by other pupils.

The programme was as follows:—

Organ—"Triumphal March"..... *Faulkes.*
Louise Deschenes.

Part Song—"Water Lilies"..... *Cowen.*
Choral Class.

Recitation—"The Little Word that was Lost"..... *Wide Awake.*
John Macdonald.

Two Pianos—"Valse in A Flat"..... *Moskowski.*
Thomas Kennedy and Cameron Allison.
Herbert Treneer and Albert Fall.

Song—"The Leprechaun"..... *May Gillington.*
Nine Kindergarten Children.

Recitation—"The Cry of the Children"..... *Mrs. E. B. Browning.*
Isabel Elliott.

Part Song—"There Sits a Bird on Yonder Tree"..... *Walthew (Words by Ingoldsby).*
Choral Class.

Piano—"Concerto in G Minor," with Orchestral Accompaniment..... *Mendelssohn.*
Mary Macdonald.

Recitation—"The Baby Actor"..... *St. Nicholas.*
Edna Sage.

Seven Part Anthem—"A Solemn Prayer," from "The Holy Innocents"..... *Herbert Brewer.*
Choral Class.

Two Pianos—"Humoresque"..... *Watson.*
Esta Wolsey and Margaret Liggett.
George Skinkle and Charles Lavender.

Recitation—"The Homesick Boy"..... *Anonymous.*
Harry White.

Part Song—"The Boy and the Bee"..... *Caldicott.*
Choral Class.

Piano—"Grande Polonaise Brillante," with Orchestral Accompaniment..... *Chopin.*
Hester Ponting.

Recitation—"Domestic Economy"..... *Anonymous.*
Emma Rooke.

Part Song—"Soldiers' Song," from Shakspeare's "Othello"
Choral Class.

Concerted—"Overture to 'Stradella'"..... *Flotow.*
Pianos—Alice Stickley and Victoria Thomson.
Grace Kay and Gertrude Coll.
Grace Kight and Eva Bullock.
Organ—Charles Duff.

Presentation of Diplomas and Certificates.

God Save the King.

Although of such length, this list of interesting selections was carried through in an admirably sustained manner, which left small room for distinctions. The recitations were marked by that clearness of enunciation and flexibility of voice which always characterize the O. I. B. pupils, and little Master Harry White made such an impression with his "Homesick Boy" that he had to be brought forward in reply to an enthusiastic recall.

The Choral Class well upheld its reputation for finished work, and sang five numbers with splendid attention to expression, clearness and sharpness of attack; the male section seemed to be more than usually strong and covered themselves with honors in the "Soldiers' Song" from Othello.

In the piano concertos the soloists were accompanied by the Darwen Orchestra and the pipe organ, Mr. Humphries conducting in the absence of Dr. Torrington, who usually performs that duty. Miss Mary Macdonald gave a splendid rendering of the Presto movement of Mendelssohn's G Minor Concerto, and Miss Hester Ponting accomplished a veritable "tour de force" in her playing of the long and extremely difficult "Grand Polonaise," by Chopin, without break or flaw of any kind and with charming attention to the requirements of expression.

At the close of the programme the diplomas and certificates were presented. Rev. Mr. Harvey and Mr. Passmore handed the diplomas to the graduates and congratulated them in neat speeches. The successful pupils were:—

A.T.C.M.—Hester Ponting, Mary Macdonald.

Third Year Piano—Mary Macdonald (honors).

Second Year Piano—Alice Stickley (first-class honors), Thomas Kennedy (honors), Grace Kay, Gertrude Coll.

First Year Piano—Eleanor Wooldridge, Edward Simpson, Horace Valiant, Beatrice McCannan (first-class honors), Margaret Liggett, Charles Lavender, Enie Ferguson (honors).

Second Year Theory—Mary Macdonald, Grace Kight, Grace Kay (first-class honors), Herbert Treneer (honors).

First Year Theory—Anna Victoria Thomson, Alice Stickley (first-class honors), Thomas Kennedy, Gertrude Coll (honors), Eva Bullock (pass).

ATHLETICS.

The past year has witnessed a great improvement in the physique of the male pupils, due to a great extent to the interest aroused in gymnasium work and outdoor sports by the enthusiasm and labor of Supervisor Ramsay. On October 21st (Trafalgar Day) the programme of sports included the following:—

Junior Events.

25-yard race, under 10 years—William G. Thompson, Neil McKinnon, Wilbert Clemmett.

50 yards run—Norman McDonald, David Graham, Jean Chatelain.

Long jump—Floyd Sager, Orville Frayne, Charles McBride.

Kicking the football—Floyd Sager, Charles McBride, Norman McDonald.

Throwing baseball—Floyd Sager, Norman McDonald, Charles McBride.

Three-legged race—N. McDonald and O. Frayne, W. Clemmett and W. Thompson, F. Sager and C. McBride.

Wheelbarrow race—O. Frayne and N. McDonald, J. Chatelain and F. Sager, W. Thompson and W. Clemmett.

Standing high jump—C. McBride, D. Graham, N. McDonald.

Senior Events.

Standing high jump—George Stokes, Thomas Kennedy, Cameron Allison.

Pole vault—George Stokes, Albert Fall, Horace Valiant.

100 yards dash—T. Kennedy, A. Fall, Joseph Boudreault.

220 yards run—T. Kennedy, A. Fall.

Putting the shot—John Hughes, T. Kennedy, J. Boudreault.

Standing long jump—T. Kennedy, G. Stokes, A. Fall.

Standing hop, step, and jump—T. Kennedy, G. Stokes, J. Hughes.

Kicking football—G. Stokes, A. Fall, J. Hughes.

Half-mile walk (partners) Hughes and Kennedy, Nicolson and Boudreault.

Throwing baseball—T. Kennedy, A. Fall, J. Boudreault.

Wheelbarrow race—Kennedy and Hughes, Fall and Skinkle.

Three-legged race—Fall and Skinkle, Kennedy and Hughes.

On February 17th there was a gymnasium contest with the "horse," the "Whites" (N. McDonald, O. Frayne, W. Thompson, A. Lott and C. McBride) defeating the "Reds" (O. Mealing, J. Chatelain, D. Graham, G. Graham, and W. Crew) by 450 points to 139 in these events:

Kneel and jump.

Kneel, stand and jump.

Kneel, stand and double straddle jump.

Roll over back and squat.

Roll over and stand.

Scissors.

Shears.

Straddle.

Centre straddle.

Open event.

On March 3rd there was a gymnasium contest in which seniors as well as juniors took part, a careful record being kept of points earned.

June 9th was the great field day, but the programme was so extensive that part of it had to be postponed until the succeeding Saturday. The local papers contained the following report of these games:—

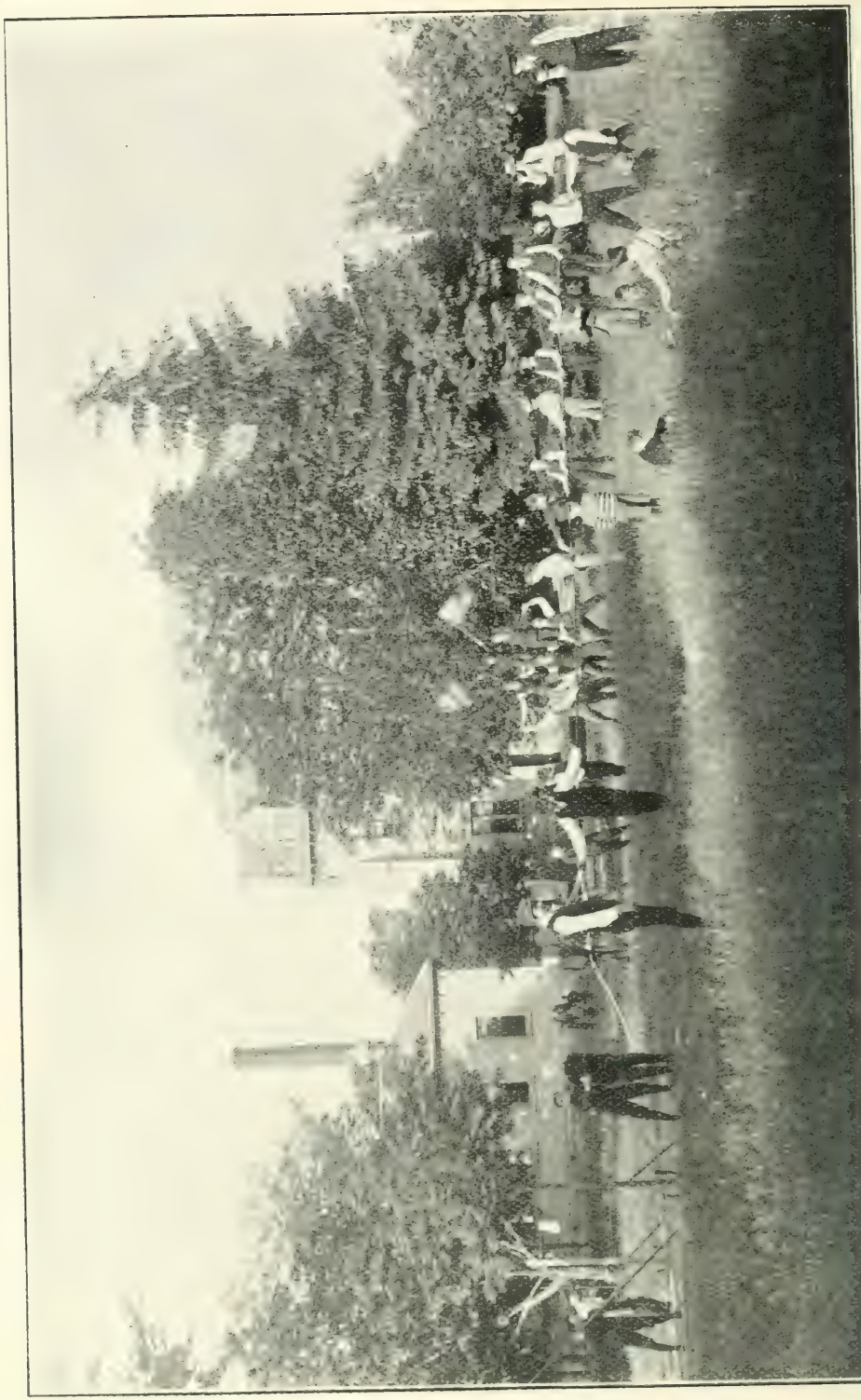
Blind Boys' Sports.

The pupils of the Ontario Institution for the Blind turned out in full force on Saturday afternoon to witness or participate in a programme of games and races for which some of them had been training for a considerable time.

The events really began on Friday night, when John Hughes (totally blind) won the three-mile road race in 21 minutes, being accompanied by Mr. George Ramsay, the supervisor of the boys, while the leading team in the junior one-mile race was composed of Orville Frayne (totally blind) and Jean Chatelain, who has some sight. They ran hand in hand.

The Saturday contests included a standing long jump, juniors—Norman McDonald, 6 feet 1½ inches; Geo. Stokes, seniors, 8 feet 6 inches.

Standing long jump with pole, seniors—Cameron Allison, 12 feet ½ inch.



Boys' Playground, O. I. B., 1906.

High jump, juniors—O. Frayne, 3 feet 1 inch.

Throwing four-pound discus—Thos. Kennedy, 82 feet 10 inches.

Race for 220 yards—T. Kennedy, 30 seconds.

Dash for 50 yards—O. Frayne, time 8 seconds.

The running track was smooth, but not straight, nor was it wide enough. Some of the racers had to start in the long grass, which occasioned some tumbles. The blind racers had to follow the sound of a string of bells which were carried by Mr. Ramsay, who ran ahead of them, and it was wonderful how they all managed to locate the sound. In the animal races, wheelbarrow, and three-legged races, which were run on the cricket ground, the collisions were frequent, but no one was hurt. Mr. Roney and Mr. F. Grobb acted as timers and judges. The events for which there was no time on Saturday were the half-mile walk, high jumping, pole vaulting, football punts, baseball throwing, quoiting match, and tug of war. These were postponed till next Saturday. The leading contestants for the senior championship are Thomas Kennedy of Guelph, and Harold Elnor of Toronto; for the junior, Norman McDonald of Wingham, David Graham of Birnam, and Orville Frayne of Forest.

One of the contestants had a special paragraph for himself, under the heading, "Blind Boy's Feat":—

"At the O.I.B. sports held recently, a blind boy named George Stokes made a most remarkable stand jump. Despite the fact that he is totally unable to see, he cleared 8 feet 8 inches, without the use of hand weights or other assistance. George is a boy of 17 years, and pretty sturdily built."

Should this record of the work of Institution boys in the athletic field seem incredible, the following article by Percy Trenchard in "Physical Culture" for May, 1906, will help to explain how these things are done:—

"How impossible—that boys hopelessly blind can compete in field sports. This will be the first exclamation of those who read that there has actually been planned a great athletic meet of the blind athletes of the country. Should a doubt be expressed in the presence of the blind themselves, it is probable that some indignation would be expressed at the mere suggestion of anything wonderful in sightless persons running, jumping, or throwing the weights like their more fortunate fellows who can see. Not only can the blind perform almost all the feats of the modern athletes, but they have a strong objection to having such an almost incredible ability characterized as 'wonderful.'

"At the Institution for the Blind at Overbrook, near Philadelphia, the boys are straining every nerve to get in condition for the proposed series of national contests among sightless athletes, the first meet of its kind in the history of sport. The closer one views the seemingly impossible tasks that the blind boys have set themselves, the easier it is to understand how they are able to run like the wind, jump long distances, play football, and do almost anything in the athletic line that is apparently impossible without sight.

"The boy who was practising at putting the shot when the writer visited the institution was using a shot with a rope attached to it. When he had balanced himself and thrown the shot it would be impossible for anyone who did not know the fact to tell that the boy was blind. The confidence, the poise, and the cast were all as natural as though done by a boy with perfect sight. Only when the boy began to haul in the line could it be seen that he was afflicted with blindness. As he hauled in he measured the length of his

'put' by the line, and as he poised himself for a second attempt, it was evidently with the determination of causing a greater length of line to trail after the weight. Very simple, after all, for a boy to be a shot-putter, although unable to tell where the shot falls by eyesight.

"So with the sprinters. Two boys at a little distance from the shot-putter were practicing the sprint. Beside each boy was a taut wire and on the wire was a spool. Each boy grasped his spool and as the word was given to start, ran with the speed of a deer and with every bit as much confidence, the spool jingling along the taut wire and holding the boy to his course. As long as he held to the spool he knew that he had a clear field.

"The long jump, standing, presents little difficulty. The boy is placed at the mark and jumps as far as he can. His jump is measured, marked, and it is the turn of the next contestant. The high jump, standing, is more difficult, but with the wonderful sense of distance that the blind possess by touch, it is only necessary for one of the sightless athletes to be placed opposite the marks and allowed to feel the height of the bar and he is ready for the signal. It is asserted upon the authority of Edward E. Allen, well known as an instructor of the blind, that when a blind boy runs at full speed he is doing the most daring feat of which a blind person is capable. At this institution and at many others throughout the country where boys are training for the contemplated athletic meet of the blind, many sightless athletes can be seen daily in fine weather and in the indoor gymnasiums during dull days, practising both the run and jump with all the confidence and abandon of persons with perfect sight.

"As for doing stunts on the trapeze, the flying rings or the vaulting horse, any blind athlete would think the person joking who professed to think there was anything out of the ordinary in these. If you suggest to one of the instructors that it is still more wonderful how the boys find the apparatus without being led up to it, the instructor will probably agree that this is one of the really remarkable things about them. A person born blind has no sense of distance as revealed by sight. He merely goes by the count of footsteps. Let him once locate the flying rings or the trapeze in the gymnasium and he will thereafter go from one point to another so many steps, from that point to another so many more, and so in time will reach his objective without seeming to do anything but walk direct to it, as though really able to see where it stands on the floor or is suspended from the ceiling.

"Another apparent joke is to say that blind boys play football, and yet they actually do, and a game of football will probably be a feature of the coming meet. The ball is located by sound. As played by blind boys, the game is more of a kicking game than the ordinary college game. The players strain every nerve to hear the sound of the ball striking the ground. The boy who hears it first runs in the direction of the sound, grabs the ball and kicks it towards the opposing side's territory. There is no tackling. When the ball is kicked behind the opposing players' goal line, the side kicking it wins."

MASSAGE.

In last year's Report I gave an account of what had been attempted and accomplished in Europe and America in teaching the blind how to administer massage. Mr. Robert John Park, who was a pupil in this Institution from 1897 to 1901, has since taken a course at the Toronto Orthopedic Hos-

pital, and for the encouragement of others the following testimonial to his efficiency is reprinted:—

249 Park street, Peterborough,
4th July, 1906.

Permit me to call your attention to a matter which may interest you and which may be of much significance to an unfortunate class of the community. It is known by those who have directed their thought to the matter that blind persons, though in every way the equals of their sighted fellows, are, by reason of their blindness, placed at a great disadvantage in earning their living, and in their efforts to serve their fellow men. Mr. Robert J. Park, a young man totally blind, has recently taken a full course of training in order to qualify himself to give massage, and in this move he is the pioneer in Canada. His teachers at the Toronto Orthopedic Hospital state that his course has been a highly creditable one. His success in this work will mean much for the blind of Canada, thus opening up a new occupation for a class of persons greatly handicapped. On behalf of Mr. Park, and in the interests of a deserving class, I ask your favorable consideration of this matter in securing for him employment in his chosen work.

Having known Mr. Park intimately for many years, I am very glad to bear testimony to the excellence of his moral character. His life is above reproach.

Messages sent to the Toronto Orthopedic Hospital will reach him.

Sincerely yours,

Arthur W. Beall.

EMPLOYMENT FOR THE BLIND.

In previous Reports I have endeavored to interest members of the Legislature, editors of newspapers and other readers in the difficult problem of enabling the blind to earn their living by their own labor. Those who have not looked deeply into the subject are apt to underestimate the difficulty. They have read of Helen Keller, or have perhaps met a blind man who was successful in some business or profession, and have drawn the natural inference that what was possible for one blind person could not be impossible for another. Yet the fact remains that blindness is a serious handicap, and the problem of self-support has been made more difficult by the adaptation of machinery to the production of many commodities formerly made by hand. Even in the few handicrafts still available, the competition of sighted labor reduces the wages of blind labor to a minimum upon which it would be hard to keep body and soul together. This is recognized in Great Britain and other countries, where the chief endeavor of philanthropists is to collect money to bridge the gap between the earnings of the blind and the cost of their subsistence, and to distribute it without pauperizing the recipients.

In various parts of the United States ladies' committees have been formed to ameliorate the condition of the blind. I received a letter of inquiry from the State of Washington, enclosing a newspaper clipping which stated that, "in accordance with a resolution adopted at a meeting of the State Confederation of Women's Clubs, held at Walla Walla, a committee had been appointed to investigate the condition of the blind in the State and report upon steps that might be taken to better their condition. How the condition of the blind may be improved and their burdens lightened is the problem to be considered by the committee. They will endeavor to arouse

public interest in the question to such an extent that something definite will be accomplished." I sent this answer to the chairman's letter:

"Brantford, 25th Jan., 1906. Mrs. J. B. Blalock, Apartment A, Metropole, Spokane, Wash., U.S.: Dear Madam,—The making of willow baskets was for some years a favorite industry here, but of late the profits have been so small, on account of the competition of factory products, that we are doing practically nothing in that line. The general report from ex-pupils is that it takes more time to sell the baskets than to make them, and as the blind man's work is generally defective, the trade will not provide a living. Of course, a man who has a home, either with his parents, or in a charitable institution, can earn his clothing and pocket money at basket-making, or hammock-making, or broom-making, especially if he has someone to look after the sales, but few men fully support themselves by handicraft. Some are doing well as piano tuners in factories—they do not generally succeed at custom work, on account of their inability to make repairs—but the best results are achieved by men who canvass or peddle. A man who loses his sight after he becomes adult is rarely able to become proficient as a tuner. The problem you are so nobly endeavoring to solve has puzzled educators of the blind for generations, and I fear that the solution is becoming more and more difficult, as competition among the seeing becomes keener and factory work is more specialized. Leading educators, like Mr. Wait, of New York, and Mr. Anagnos, of Boston, recommend the discontinuance of teaching handicrafts, and the substitution of higher education, as for the professions, but with many children that is simply impracticable, and in the case of a laboring man who loses his sight by accident or disease it sounds like a mockery. I send you a couple of reports of this Institution—the latest is in type, but not yet distributed—and will be glad to receive the results of your investigations. I am sorry that I cannot give you more information or more comfort, but if I knew just what you want to know, I would feel that my value had increased many fold."

Noticing that a meeting of the New York State Association for Promoting the Interests of the Blind was to be held at the Waldorf-Astoria Hotel, I wrote to Miss Winifred Holt, the Secretary, who sent me a kind letter enclosing newspaper reports of the meeting, from which I gathered that Mark Twain had made an amusing speech, and was followed by Mr. Joseph H. Choate, while letters were read from Grover Cleveland and Helen Keller. The latter wrote:—

"To know what the blind man needs, you who can see must imagine what it would be not to see, and you can imagine it more vividly if you remember that before your journey's end you may have to go the dark way yourself. Try to realize what blindness means to those whose joyous activity is stricken to inaction. It is to live long, long days, and life is made up of days. It is to live immured, baffled, impotent, all God's world shut out. It is to sit helpless, defrauded, while your spirit strains and tugs at its fetters, and your shoulders ache for the burden they are denied, the rightful burden of labor. The seeing man goes about his business confident and self-dependent. He does his share of the work of the world in mine, in quarry, in factory, in counting room, asking of others no boon save the opportunity to do a man's part and to receive the laborer's guerdon. In an instant, accident blinds him. The day is blotted out. Night envelopes all the visible world. The feet which once bore him to his task with firm and confident stride stumble and halt and fear the forward step. He is forced to a new habit of idleness, which, like a canker, consumes the mind and destroys its beautiful

faculties. Memory confronts him with his lighted past. Amid the tangible ruins of his life as it promised to be he gropes his pitiful way. You have met him on your busy thoroughfares with faltering feet and outstretched hands, patiently 'dredging' the universal dark, holding out for sale his petty wares, or his cap for your pennies, and this was a man with ambitions and capabilities. It is because we know these ambitions and capabilities can be fulfilled that we are working to improve the condition of the adult blind. You cannot bring back the light to the vacant eyes; but you can give a helping hand to the sightless along their dark pilgrimage. You can teach them new skill. For work they once did with the aid of their eyes you can substitute work that they can do with their hands. They ask only opportunity, and opportunity is a torch in darkness. They crave no charity, no pension, but the satisfaction that comes from lucrative toil, and this satisfaction is the right of every human being. At your meeting New York will speak its word for the blind, and when New York speaks the world listens."

At the time of this meeting the Association had been in existence five months, and it proposed to establish workshops for blind men and blind women; also classes for reading, writing, and trades for the adult blind, and visitors and home teachers for the adult blind. The officers asked for $15,000 to begin with.

By sending Reports and marked papers to Ontario newspapers, I have managed to provoke some discussion of the employment problem, one writer suggesting that the Ontario Government should appoint a commission to make a thorough and impartial inquiry into the needs of the blind of Ontario. Such inquiries have been made in other countries, notably by the Royal Commission on the Condition of the Blind, whose Report was presented to both Houses of the British Parliament in 1889. From that Report I have extracted a mass of evidence, relating to matters of common interest to all countries in which there is necessity for provision for the blind. It will well repay perusal by all who have not yet been impressed with the difficulty of the employment problem, as well as by those who take an interest in the literary and musical education of the blind.

EVIDENCE TAKEN BEFORE THE BRITISH ROYAL COMMISSION.

George Martin Tait—The late Lord Shaftesbury often spoke of how in his early days the blind used to be shut up in cellars and places like that when it was thought that nothing could be done for them; that is now very much altered.

A considerable number of blind are to be found in the streets of London, begging. They fall back. Perhaps they started fairly well with some industrial work, or as musicians, but there is a very strong inducement to make a profit out of what they consider a piece of personal property, namely, the sympathy of the sighted for the blind man. It is a stock in trade to them, and very many are induced to make use of it.

They are the very poorest of the poor: blindness is very largely caused by vice and evil surroundings. Once you get the houses of the people improved, their condition improved, their education improved, and their surroundings improved, you will find that blindness will depart from our midst to a very great extent.

Rev. J. P. Faunthorpe—Music is generally thought to be that for which the blind has a more especial faculty, as it goes by touch. But to train blind boys or girls with a view to their getting their bread partly, or if you like

wholly, by teaching music, or by becoming professors of music, or even organists, is in its way a very great mistake, because you necessarily are keeping out more competent persons. I think all blind people should be taught music, as a civilizing element, but as a way of getting their bread, never.

Miss Lovell—A great many of the elder girls are physically strong. They like to do housework, and they do it very fairly and enjoy it. They begin by sweeping and scrubbing, washing all their own tea things and breakfast things, and so on, laying tables and clearing away, making beds, cleaning boots, and cleaning plate. At first they require much superintendence and assistance from sighted persons. We keep no nurse for the little ones. The elder girls do everything for them.

We have a great many brought to us at the age of eight who cannot hold a spoon and they would not know the top of a pinafore from the bottom of it. Some of them never come to anything, and it is just because they have been brought up as babies, nursed and fed and carried down stairs, and their clothes put on, and never told which was one thing and which was another.

One of our girls does her mother's housework, and she does knitting and chair caning, and entirely supports herself and partly supports her mother.

Miss Weaver—As a rule, blind children become good spellers, better, I think, than seeing children when they have been the same time at school.

Rev. B. G. Johns—A very large proportion of them earn by their trade a considerable sum towards their living. Basket making and mat making are the two trades in which they succeed best.

Fifteen out of sixteen of my pupils believe that they have a gift for music; ten out of sixteen believe that they have a heaven-born genius for music. I should say half of them could be taught music fairly well.

We try to prevent blind men marrying blind women, but it is exceedingly hard to check.

We have found it almost universally true that a boy who attempts to master two trades fails in one certainly, and possibly in both.

A few customers will buy from a blind man because he is blind, but a great many will not buy from him because he is blind; they think that it is an inferior basket that he makes.

Blind basket-makers in ordinary workshops with sighted people are looked upon disagreeably; the sighted people do not help them as they might, or as you would expect they would. They seem to think that it is a sort of interference with their chartered rights, and that the blind man ought to be somewhere by himself out of their way.

William Hibbert—I would have blind children taught a trade at the proper time, but not in childhood; certainly not till they are 14 or 15 years of age. Sighted children, whether boys or girls, are not apprenticed till they are 14 or 15. Sighted workmen work three or four times as fast as the blind; even in chair-caning a blind person would take from four to five hours for one chair which a sighted person could do in one hour, taking the day through. A blind person works much slower than a sighted person.

The majority of those I have met have become blind after they have arrived at the age of 40 years, when it is impossible for them to be taught trades to earn anything by; because if they learn a trade they never gain sufficient speed to do anything; the young ones are very slow who are taught from childhood, and the elder ones must necessarily be slower.

There is one advantage in chair caning, that it requires no tools and it takes no room.

Blind children, brought up by themselves, distort their features, they wriggle and twist and shake themselves about, and all manner of things.

The German system, under which the blind institutions look after their pupils as long as they require assistance, is an incentive to morality.

In some instances blind women have married, and they have always performed the household duties, even to washing and ironing, and mending and making.

William Tibbles (blind)—A knowledge of a trade, acquired as early as ten, makes a child more proficient than if learned later, provided the training is sufficiently prolonged.

R. B. Carter—Cases of blindness from birth are very rare. Blindness is not hereditary. The scientific definition of blindness is the absence of light perception, and the practical definition of blindness is a state in which no occupation can be followed for which vision is required.

J. L. Shadwell—Blind children do better in special schools than in ordinary schools. Whereas for an ordinary child a home is, generally speaking, better than a school, for a blind child a school is better than a home. If a blind child is at home, its parents and brothers and sisters are constantly liable to do too much for it, whereas at a school, where everybody cannot be waited upon, the blind children are forced to wait upon themselves, and that is a very good thing for them. The blind get too much in the habit of expecting things to be done for them, so that they do not learn to do things for themselves.

Alfred Midwinter—Basket makers labor under the disadvantage of imperfect teaching. They require long experience, though it is the best trade possible, perhaps, for a blind man to learn young, because he is able to begin and finish his work without any sighted assistance when he has learned the trade. That is not the case in any other trade that I know of which the blind are capable of working at, and in order to get the necessary skill to be able to work with sufficient dexterity and quickness to enable him to get a living, he requires a long practice because there is an infinite variety in basket-making.

J. J. Mills—Some blind people never will be able, however long they are taught, to earn sufficient to keep themselves. The more you throw blind people upon their own resources the better for them. A great many blind are spoiled from not being dealt with in that way. A boy ought to start his industrial training when he is about ten years old, after he has learned to read and write.

Miss Rye—We begin to teach the girls knitting directly they are able to hold knitting pins, but, of course, when children are so young, their education is the principal thing first. I believe in giving the blind a better education than some of them receive, and we go in for a thoroughly good English education. We allow them a month to learn how to dress themselves. I do not believe in mixing blind children with sighted children. They feel their affliction far more when they are with children who can see, and they are not nearly so happy as they are by themselves. I have often thought that it is a great pity that some employment for the blind cannot be introduced which is more lucrative. The handicrafts that they learn are so badly paid for. Knitting is very slow work, and it is impossible for a woman to support herself entirely by knitting stockings.

Miss Phœbe Hamilton—The great requirement in the case of young blind children is that bad physical habits should be corrected. I do not know of anything girls can be taught by which they can earn their own livelihood. They can earn just a little, but not much more than mere pocket money, by knitting.

Mr. W. C. Lester—I see no objection to the establishment of wholesale depots where materials could be kept and sold at cost price to the blind, and where the articles manufactured could be stored and distributed; the only thing is that the blind man must have his earnings supplemented.

Mr. Alfred Willis (blind)—In answer to the question, "Should some provision be made for the blind after they leave these institutions?": They would be very thankful that it should be done. Speaking not only from my own personal experience at the time I was at the St. John's Wood school, but from what many pupils from various schools have told me, the whole school experience is, as it were, overshadowed with a gloom as to the future, and the constant thought was, "What shall I do when the time has expired?" Nobody could get a livelihood at chair-caning. I only know one man who could do three chairs a day, at about 7d. a chair; the average is two. I know only one man who is making a living at basket-making. He partly supports himself by getting work from the tramway company. I do not know of any mat maker who is working; they cannot get anything for what they do. I know a man earning 6s. or 7s. a week at woodchopping, at home. I have fourteen persons who are getting their living in various ways, selling tea and other commodities.

Henry J. Wilson—The trust was founded by a bequest of the late Mr. Henry Gardner, who left £300,000 for the benefit of the blind in England and Wales. The money is to be divided into ninths: two-ninths have to be given in instruction to the blind in trades, handicrafts and professions, including the profession of music; two-ninths for instruction for the profession of music only; two-ninths for instruction in trades, handicrafts and professions other than the profession of music, and the remaining three-ninths are to be applied in providing pensions or grants, and generally in such other way as the committee may think best for the benefit of the blind. I think that the schools ought to keep touch with their old pupils who have learned a trade, at any rate for a certain number of years, and that a bonus should be given, if possible, by the schools to those who are starting on their own account and are really deserving and in need.

Henry Smith—The principal trade at the Kensington workshop is baskets. The stock has been accumulating very largely; it is difficult to compete with the East End people, and more particularly in the brush department. We sometimes give to one of our men, employed in the brush department, chair-caning for his wife to do at home. I think that fresh branches of trade should be opened out to the blind. I could guarantee that our blind people can manufacture baskets as well as any seeing person. There are more brush makers than basket makers, but the basket makers get more wages. Scrubbing brushes cost us to make, taking wages and material and one thing and another, about 7s. a dozen, and to get them sold we must sell them at 5s. a dozen, that is to say, if we compete with wholesale people. The workman has about 9d. profit for caning a common-size chair, and he would be able to do two a day.

Henry Wilkinson—I am a basket maker by trade; learned it at the Bristol Asylum. I have been making a very respectable living for the last 62 years, but I did not depend upon my trade. I married a wife who had a

mangle, and I earned more money by assisting my wife at the mangle than I did at my trade. Very few sighted basket makers would care to take a blind man into his workshop, because a blind man's work would not in general be so good as a sighted man's work. A blind man cannot make such a beautiful shaped basket as a sighted man. I never worked upon a mould myself, though I have heard talk of blind men working upon a mould, but I know so far as this, that if you had a mould to work upon it would incline the work to run to the left, to screw round to the left as you work to the right. I have cased a great many jars and bottles, and I found that it was like working on a mould to put basket work round a stone jar. In doing that, if a man is not very careful the work will run all round to the left.

Mathias Roth, M.D.—People say you can do nothing for congenital blindness, but we know that this congenital blindness is caused in many cases by the intermarriage of blind persons; a second cause of this congenital blindness is intermarriage between near relations. In all industrial work, if you are to do it properly, you must feel in your head what you do with your body; that is more important for a blind person than for a sighted person; therefore, I believe it is of the greatest importance to give the maximum of health, the maximum of power, and the maximum of strength to every blind child, in order to enable him to learn some industry. In Denmark, everyone that is blind is brought up to some industrial occupation. I have been at Copenhagen, Christiania, and Stockholm. The blind in those places are engaged in mat-making, rope-making, chair-making, basket-making and cabinet-making. I saw shoe-making only in Christiania. So far as I saw, they work in workshops, but in Denmark the director told me that many of those who have been taught some trade go home and their friends provide them with the necessary materials, and the work they do, if they cannot sell it in the country, is sent back to Copenhagen, where they have a central depot, in which such work is sold. They have done more there in the way of making the blind independent than they have anywhere else; they keep an eye upon them after they leave the institution, and then in the town wherever they are they invite a few people to look after them, and, as far as they can, help them. In some cases they earn all they want and do not want any extra support; in other cases they do not earn enough and their earnings have to be supplemented. I have not seen the German institutions at work; in France they are beginning now to have workshops.

Rev. Henry Bright—Of course, I fully believe in self-help and employment for the blind so far as that employment can be obtained. How we are to get over the difficulty, however, that a great number of the blind who leave our institutions have neither home nor capital I really do not know; I hope this is a point which the Royal Commission will tell us something about by-and-by; but I find a good number of persons who have been taught in institutions in more indigent circumstances, I rather think, than they were before those persons went to the institutions at all. I do not exactly mean that they have not learnt any trade sufficiently to be able to earn their livelihood by it, but a person is generally sent to an institution by the sympathy of a number of friends, and when that person is supposed to have learnt his trade, whether he has or has not, those friends naturally feel that they have done what they could. The consequence is that that blind person is minus some of the friendship and interest when he leaves the institution, because his friends believe that they have placed him, by their influence and sympathy, upon the basis of self-help, and so he comes out minus some of the friends that he might have had before he went in, and yet he has neither home in which nor capital with which to pursue his duties.

Robert Storey—A youth you can get on with very well, but when a man gets to 25 or 30 years of age he had better not touch basket-making at all,—it is a complete failure. That I have specimens of with me now at work. I have one young fellow, a clever lad, about 20 years old now; I have had him with me about three years, and he can make things almost as well as I can myself. Another man has been there five or six years, and he can scarcely do anything well, and he began as a man. Let them start work at about 14, that is plenty soon enough. I think that basket-making should take five years, but that depends a great deal upon the men that they have to put them forward. It wants a thoroughly experienced man to teach the blind, and the man must have wonderful patience. You may bestow all the pains you can on one man and you cannot put it into his head, and cannot teach him; he cannot remember it.

Isaac Thomas Price—I was at St. John's Wood for about 10 or 11 years; during that time I studied music as a profession; I was not taught any other trade. It was the custom after the boys were about 14 or 15 years of age to let them go into the workshop for two or three hours a day to learn a trade, letting them spend the other two or three hours a day in the schoolroom. Now a sighted boy is expected to devote several years to learning a particular trade, and he is supposed to be at it all day long, and I think that a blind child should certainly devote quite as much time, and perhaps a little more time, to the acquisition of a trade. I think it is obvious that they could not have been thoroughly well taught under that system. I have known one or two of those who left the school at the same time as myself who have earned an indifferent livelihood, and in several instances those who had learnt tuning at the St. John's Wood school were afterwards sent to factories and of course have been able to earn a good living in consequence. There is a great deal of prejudice on the part of the public which induces them to refuse blind persons leave to compete for the position of organist. I think that if blind children were allowed to mix more freely with their seeing companions as they grow up that prejudice would be partly removed. Those who promote the institutions might do a great deal more towards obtaining employment for those who have left the institutions. In many branches of industry many blind people, after having worked very hard all the week, are only able to earn a certain amount. We think that in such cases their earnings should certainly be supplemented. One of the causes of failure hitherto attending the efforts made to ameliorate the general condition of the blind has been the fact that the blind have not themselves been sufficiently consulted as to what is best for them. As far as my experience goes, tuning has proved to be the most remunerative occupation.

John Stainer, Mus. Doc.—I see no reason why a blind man or woman should not be able to gain a livelihood from vocal or instrumental performance, provided, of course, that he or she is possessed of a very high order of talent. As teachers the blind are under special disadvantages; it is a serious thing for a teacher not to be able to see the position of a child's hand when it is having a lesson on the pianoforte. In the keen competition amongst qualified seeing musicians, I think blind musicians stand but a poor chance of earning their bread. Their best chance would be as teachers of solo singing, their quick ear would be of great value in teaching voice production. An enormous number of musicians get their living by playing in the orchestras at theatres, but very few conductors would like to go to the extra trouble that a blind member of their orchestra would put them to. There are two occupations in connection with music for which the blind are well adapted, viz., pianoforte tuning and pianoforte making. I see nothing to prevent

the blind following these occupations. I do not see why blind persons should not become excellent tuners, and I do not see why they should not take part in putting pianofortes together. I do not think a blind person could very well undertake organ tuning; he would be heavily handicapped in comparison with a seeing person; he would be likely to break his neck in going up and down ladders; one has to be half a monkey to look after an organ even under the most advantageous circumstances. I should say that the tuning work for which the blind are best adapted is that which is done in the pianoforte manufactories; in all the large manufactories they have tuners constantly at work getting pianos into tune that are intended for the show-rooms or that are going out on loan. A blind person could very well do the tuning at the manufactories, because if anything required to be mended it would be taken to another workman in the manufactory to be repaired; but in the country the tuner has to mend broken pedals and mend broken hammers, and put fresh leather on the hammers where necessary. I daresay he could do it, but he would not be able to do it so easily as a seeing person. Mending a smashed hammer involves going about the house and getting a glue-pot.

Sir George A. Macfarren, Mus. Doc. (blind)—With regard to the matter of memory, and with regard to the matter of ear, I have often heard it said that persons in losing one sense quickened the others. I disbelieve that wholly. Any faculty that is greatly exercised of course is strengthened, whether it is the sense of taste, or the sense of sight, or the sense of smell; a person who makes it the business of his life to exercise that faculty acquires a sensibility that ordinary persons do not possess, but it is not through losing his sight that a man is able to hear or able to remember any better than others, but from the habit of trying to remember or listening carefully. I think it is a mistake to appropriate so very much of the lifetime of blind persons to working at industrial occupations, which tends to stiffen their faculties, physical and mental. I believe that a very large majority of blind persons are capable of mental exercise, and if they have the opportunity of good training they may do highly respectable intellectual work; and I have been sorry to find in the blind institutions I have visited that the average work is in mat-making and brush-making and such matters, and that the persons who work at those occupations are stolid, hard in their manner, and dull in their apprehension, whereas those who are taught music generally have far finer intelligence than their companions. On that account I believe that they might in the musical profession hold a very fair status, that is to say, if they all had the opportunity of developing what gifts they have received from nature. In an institution for the blind every pupil might be made to pass through some kind of probation to show his musical capabilities, and only those should be relegated to manual labor who proved decidedly dull of intellect, and I believe they would be very few in proportion. I think the study of music not only improves the ear but improves the general intelligence; and it would be a means of happiness to them and enable them to give pleasure to others. I am quite sure that some blind persons have made very good choir masters and church organists. I have reason to know that blind persons can carry on the occupations of tuning pianofortes and voicing harmoniums with complete success.

James Hampton, founder of a home for the blind in Webber Row, Southwark—So many poor, blind persons came to me asking if I could furnish them with a bed or give them enough money for a night's lodging, that I thought of starting this home. Numbers of the blind have no home and no friends. The blind school and the workshops are capital things for the

blind, in their way, but when blind people come out of those institutions they have to return to their families, who are poor, and what they have learnt in the institutions is to a great extent thrown away; they have no opportunity to extend the knowledge they have acquired in those insitutions or to work at a trade that they may have been taught in them, and when they come out they find that they are a burden to their relatives, who turn them out on the streets. A young man, who was a splendid performer on the piano and the organ, could not get any pupils to enable him to earn his livelihood, and so he used to go into the park and lie there. His mother said if he did not work he should have no food, so I had him three years in the home. I could not get him any employment. Afterwards, as soon as his parents found that he could earn a good bit of money by playing the piano, they took him out of the home, and now he is at Brighton. He gets a guinea a night for playing at concerts. As regards mat-making, the blind cannot compete with the sighted, and the sighted cannot compete with the convict labor, because mats, the product of convict labor, are sold so very cheap. The basket trade is very much prejudiced by the importation of German baskets. You can buy a most beautiful basket in Tavistock street for a mere nothing, a basket which a blind man could not possibly make. I would suggest that the country should establish a home for the indigent blind, into which blind persons when they came out of these institutions could be taken, and where the knowledge which they had gained in those institutions could be extended and developed, instead of their going into the workhouse or going upon the streets. Blind people have a great dread of the workhouse, and their repugnance to the workhouse is quite justifiable, considering how they are treated there. I think their blindness is a sad affliction in itself without their being mixed with all classes. When they go into the workhouse they become mutes, because they are put in the company of men who have not the feeling for the blind that they ought to have, and by aggravating them and one thing and the other they become completely mutes. They keep themselves to themselves and become complete imbeciles. I do not mean by that that they become really speechless; they become stupid, by keeping silent; they become imbeciles. The best trade a blind person can learn is basket-making, because he can finish the job himself.

James A. Campbell—There is a strong prejudice against the employment of blind organists. There always must be a residuum of blind persons who are unable to support themselves, who must depend on charity. As a rule those who have completed their education at Norwood College are able to gain their livelihood without any assistance. We have them so superintended that we endeavor to prevent their wasting time in any way; but we believe that the subsidies are necessary, on account of the men's inability to earn as much as is required for their support.

A. W. G. Ranger, M.A., D.C.L. (blind)—I am practising as solicitor in London, with a staff of ten clerks. Lost my sight when I was 14 years of age. Do not know anyone who has gone through the same career as myself in my profession. Think the education of the blind should be in the direction of the liberal professions. I would give a blind man or a blind girl as thorough an education as is possible, and then the blind person will himself or herself decide what line of life they will take up afterwards. A good education is of the same value to a blind man or girl as it is to a sighted one. When you are a little educated your ambition is aroused and you are capable of doing what you were not able to do before. I do not think that a blind man or girl should be directed in the first three parts of his or her

education towards any particular thing. It is not so with sighted people, and I do not think it ought to be so with blind people. Blindness is altogether a much more severe visitation for a girl than it is for a man, and therefore the better her mind can be trained and stored the greater is the alleviation to her. I would rather see more money spent in the effort to train and educate girls thoroughly well than to educate and train men. I do not think the onus, so to speak, is on the advocate of advanced education for a blind girl to point out how she is thereby going to earn her living, as if in default of his being able to do so the conclusion were to be drawn that she will not be able to earn her living as the result of an advanced education. I think that a thoroughly educated blind girl herself would find out ways and means of getting her living. I think the mistake on the musical point is the too ready assumption that every blind man must of necessity be a musician, and that if he is not one he can be made one.

F. J. Campbell—The blind as a class have less vitality than the seeing. Therefore every arrangement which we make is based upon the fact that we believe there is a necessity not only for gymnastic training, but for developing the activity of the blind children; and we have lawns for them to play on, and games such as puss-in-the-corner, blind-man's-buff, and so on. I try to make those games a part of their education, and wherever I am I try to learn new games which I can teach to my blind children. Our first step is the healthy development of their bodies. One of the most difficult things is to overcome the awkward habits of the blind. Many of them learn almost from infancy a certain motion of the head or a habit of putting their fingers in their eyes. This requires almost constant attention. I do not say that there is not difficulty in getting employment. I do say that where a young lady or young gentleman has been refined and gentle in manner, where their appearance is as it should be, and is not objectionable, where they are pleasant and intelligent, and can converse agreeably, and are thoroughly prepared, I have never in a single instance failed to get employment for them. It is always a principle with me, when I take a holiday, whatever village I go into, to find out whether there is any possible chance of my placing there an organist or a pianoforte tuner or whatever it may be. I never wake up or go to sleep without having in my mind where I can find employment for my blind boys and girls. In some of the blind schools, where they have both workmen and children, and where the children are allowed to intermingle with the workmen, the children are often taught bad habits by the blind workmen: I know this to be so in a number of cases. I think if the Commission could make any recommendation to cause the separation of the work department and the educational department, we should do a great service to the young blind. Our playground has been planned so that there is a separate part for pupils of different ages. To make a good pianoforte tuner you must do very much more than teaching him simply to manage his tuning hammer. We specially make our pupils in the technical school, that is the pianoforte tuners, give great attention to singing, and singing in the best way. I mean we teach them to discriminate between good and bad tones. Music without a very excellent training as a foundation, I mean general education and physical training, is almost worthless to the blind. Many schools have given too much time to the music without the general culture which is necessary to make music a success. Exercise with Indian clubs is one of the very best exercises for pianoforte players. Some of the blind must always depend upon handicrafts; handicrafts must always occupy an important place in the treatment of the blind, not only with the adult blind, there are certain young blind who will grow up and

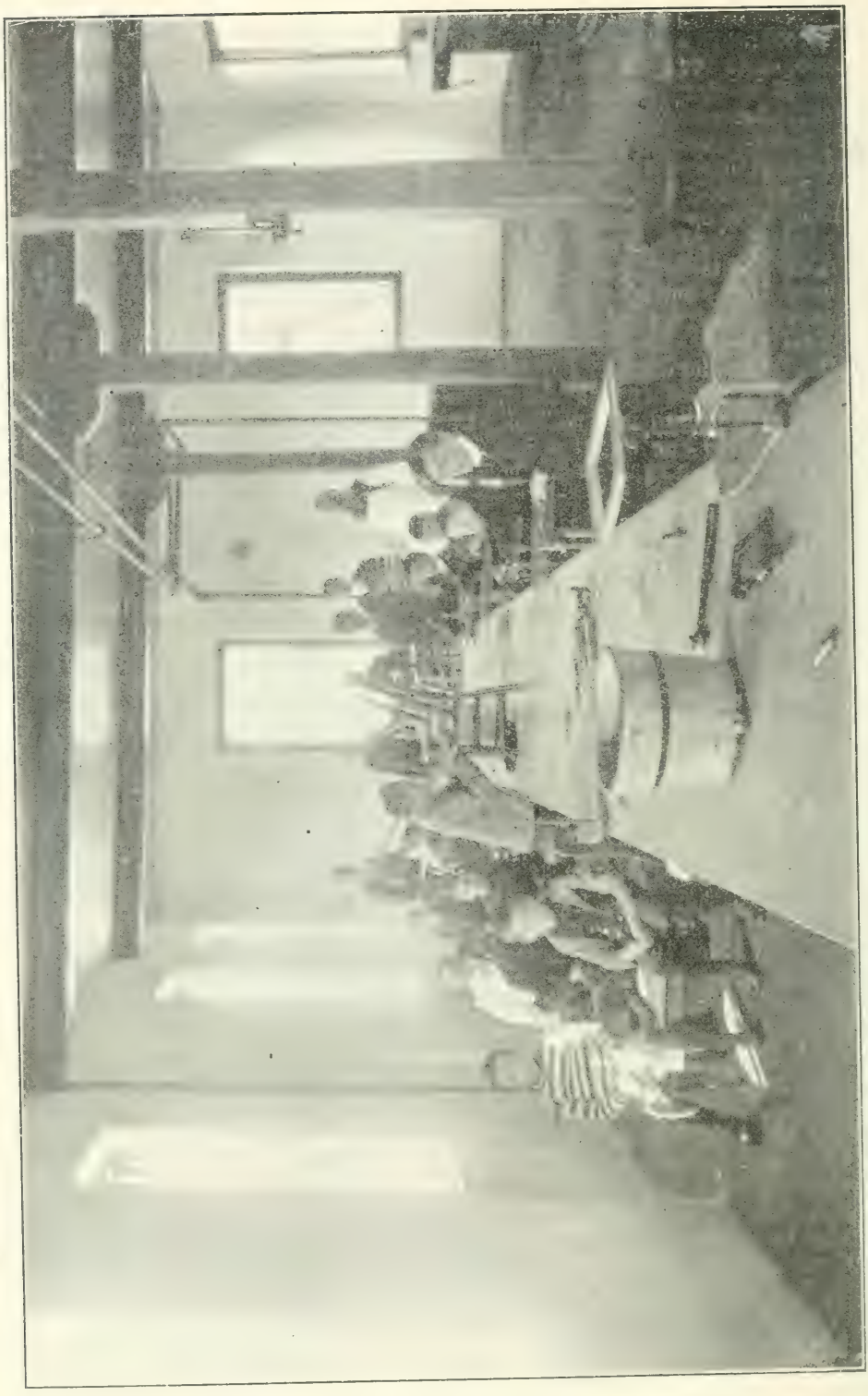
never be fit to cope with other things; and they should have mechanical training for their employment afterwards. I think if the young blind are well trained the large majority of them can do better than working at handicrafts. I think it is of more importance to the blind than it is to the seeing to read out their exercises in school, for this reason, the sighted child in going along the street in every sign that it sees is learning how to spell; a blind child has great difficulty in learning to spell, and if it uses writing a very great deal that to a certain extent makes up for its deficiency. As a rule, our people find employment. We never lose our interest in any blind person that comes under our administration. If you would make the blind self-sustaining, you must lift them into a different atmosphere altogether. It is fatal to the blind if you educate them with the idea that they are a poor indigent class. The whole tone and feeling on the subject must change; and if you do not give them sufficient education and intelligence to bring them into relation with ordinary society your education of them is worthless, and then they must go back to handicrafts only. I have one young man in Belfast who has gone into the coal business; he is doing an excellent business. Two of our young men have a shop for selling pianos that they pay £330 a year for in Glasgow. We have several men in London who make a great deal of money by selling pianos, but what they do is to get the commission. One of our old pupils is farming. We have one remarkable instance of a sugar refiner who is managing a large business in Whitechapel. A number of my old pupils in America have gone into the book business.

T. R. Armitage, M.D.—For a couple of years I spent several hours every day in visiting the blind of London at their own homes. I then found out that the blind, whether trained in institutions or untrained, had scarcely anything to do, that they were to a very great extent idle mendicants, that in fact they were not earning their own living. On inquiry we found that a very small proportion of the former pupils in institutions of the United Kingdom who had been trained in music were able to succeed as musicians. I went over to Paris and investigated the question very carefully there, and I came to the conclusion that the education of the blind as musicians in Paris was infinitely superior to anything that we had in England. That conviction resulted in the foundation of the Normal College. The main object of the college is to train musicians to make the blind self-supporting in the profession of music, but it is impossible to do that without giving them also a thoroughly good general education. It is necessary to train a great many of the blind in manual trades, or in professions not musical. If we trained all the blind as musicians, we should overstock the profession, and there would be no work for them to do. It would be better for us to lay down in general terms that the education of the blind ought to begin with the Kindergarten with object lessons, and should go on with reading, writing, arithmetic and geography, according to the best methods, and that the blind children should receive the same kind of good elementary education that seeing children receive. The success in life of the pupil depends on a great many circumstances that cannot be tested by examination. One very essential point is the moral condition of the pupils, which is brought about by the moral discipline of the school. Then the physical training of the pupils is a most important factor in the question whether they become self-supporting in after life. If the blind are turned out weakly they cannot succeed. We may say what we like, but the struggle in competition with the seeing is so keen in every branch that a blind man can take up, that unless he is fully equipped for the struggle he cannot succeed. The system which in Germany (Saxony only) goes by the name of "fuersorge" was introduced in Dresden about fifty years ago;

it has been slowly developed, and it consists mainly in the institution keeping touch with all its former pupils. A register is kept, there being a pigeon-hole for each pupil, and the papers relating to that pupil from the time of his first entering the school up to his death are kept all together, so that whenever any question arises about a particular pupil the director simply has to refer to his dossier and finds everything recorded about him, the grants he has received, his conduct in the school, and everything else that can be possibly wanted to form a judgment. Then these former pupils are looked after by a society, of which the director of the institution is always the president, which administers a fund for former pupils. The fund for former pupils has been gradually accumulating for the last fifty years by subscriptions, and by the sale of the work of the pupils while in the institution, that is their subscription to the fund, and it now amounts to about £1,500 a year. Ex-pupils are furnished with outfits and established in business. Then the director before establishing the pupil looks out for some respectable and influential man in the village who will become a sort of godfather to the blind man to look after him, give him advice whenever he requires it, help him to get orders, and keep the institution informed as to his circumstances, and as to his conduct. The pupil is also expected to write to the institution at stated times—several times during the year—saying how he is getting on and giving full particulars about himself. Then as long as the pupils conduct themselves properly, and do not receive parish assistance, or do not beg in the streets, or do anything else that is disreputable, they are sure to be assisted from the fund to whatever extent is absolutely necessary. The difficulty of making the blind self-supporting is so infinitely greater than in the case of the seeing that you ought to offer special advantages in the case of the blind. As a general rule, the old and infirm are much better looked after by being allowed to live at home, receiving a pension, than by being congregated in an asylum. The difficulties with regard to the deaf and dumb are entirely different from those that we have to contend with with regard to the blind. I understand from the evidence which we have had before us from gentlemen who have a knowledge of the subject that there is not at all the same difficulty in finding work for the deaf and dumb after leaving institutions, provided they have been properly trained, that there is in finding work for the blind; with the blind the great difficulty begins after they have left the school and are launched upon the world; with the deaf and dumb the great difficulty is the training in the institution; therefore I think the two classes stand on a different footing in that respect. Norwood is not a school for teaching basket-making and mat-making. The blind tuners, in order to be successful, must as a rule be better workmen with a better knowledge of music than their seeing competitors.

W. H. Cummings—The blind should begin to learn to sing young; as soon as possible; just as soon as they begin to learn to read. Not only their character, but also their very faces, improve under the training. The prejudice against the blind was very strong a few years ago, and advertisements used to be inserted in the musical papers when an organist was required: "No blind men need apply."

Anthony Buckle—I strongly urge, where it is possible and where there is any likelihood at all of success, letting the pupils leave the institution and go to their own homes and work there, in preference to congregating them together in large institutions; but at the same time I am strongly of opinion that there are a large number of blind who come from small villages who are dull fingered, and perhaps somewhat dull in intellect, for whom you must and ought to provide large workshops. I think that is one of the needs



Cane Chair Seating, O.I.B., 1906.

of the present day, a larger number of large workshops in towns. We have some basket makers who can earn £1 a week; we have some inferior ones who will earn perhaps 10s. We find the dull fingered boys, and boys of dull intellect, never succeed with baskets: we are obliged to put them to brush-making. Baskets cannot be made by machinery; they are making brushes now by machinery, I am sorry to say. Not more than 25 per cent. of the pupils are suited to learn music. The other 75 per cent. are more or less suited to learn handicrafts. But I ought to say with regard to the latter, you have always a certain number that from weak physical health or from weak intellect will never be able to earn the whole of their livlihood.

H. L. Hall—Within the last two years they have concluded to take only young people at the Philadelphia Institution for the Blind: there are still some adults at the Institution, but they are gradually shutting their doors to them. In Pennsylvania the schools have taught brush-making up to last year, but they have abandoned it as worthless; they taught mat-making for many years, perhaps forty years, and they abandoned that as worthless. They now teach broom-making, carpet-weaving, cane-seating, and mattress-making. These are the trades which they teach the boys. The girls are taught bead-work, knitting, crocheting, and hand and machine sewing. I should prefer not to teach brush-making, because it does not pay at all. I never put forward the work produced by the blind as being blind work at all. I sell it upon its own merits. In my opinion a blind industrial institution can never be self-sustaining on general principles, because we have to compete not only with skilled sighted labor, but with all sorts of steam machinery. I believe that a very large proportion of blind people, if they earn their living at all, must do it by some handicraft. I have never had any success with any blind person that I found begging; they seem to prefer begging; they seem to have lost their manhood. I cannot get anything out of them, I cannot make them work. I have very frequently had to dismiss men for bad conduct or hopeless indolence or idleness. Two mattress-makers will do all the custom work that I can get in our big city, and will not be employed all the time. I asked the New York Institution why they recommended that the blind should be employed in cane-seating, knowing as I did that it was not profitable, and the answer I received was that they recommended it as a means of education. I know that in the largest concern in Baltimore their trade has been solicited this year at 3 cents per chair; that is to say, an ordinary dining-room chair, and I have never yet known a blind man that could cane over three a day, and that would be 9 cents of our money. I am speaking of new work. In my judgment, there should be two institutions, one purely educational, which should take blind children under a certain age, the other purely industrial, which should take all others of suitable age. One man may be able to earn his living at 60, while another may be entirely used up at 40. If a man does not succeed in handicraft after he has left the institution, it is not so much the fault of the institution. It would be utterly impossible for any man, blind or sighted, to set up and carry on successfully, and without money, without friends and without credit, a broom business or any other business against a large establishment like mine, or against the other large concerns in Philadelphia. The want of success is not due to the institution.

James McCormick—The blind cannot get a living at music. I may say that the blind do not like to work with seeing people in workshops; they prefer working by themselves. The blind cannot compete with the seeing world. A great many basket-makers will not employ them, and under the trades union laws seeing workmen will not work in the shops with them.

then if they get work they cannot do it at home. In my experience it is better not to put a child to industrial training too early, but to treat a child as a child as long as he is a child, and then when he becomes a man put him to work; they make better scholars by not being put to work too early, and the better scholars they are the better men they are in the workshop.

THE EDINBURGH CONFERENCE, 1905.

It may be objected that the evidence above quoted was taken nearly a score of years ago, and that conditions have so changed in the interval that the facts and statements are no longer applicable. There was an International Conference on the Blind held at Edinburgh last year (1905), attended by delegates from the United Kingdom, the United States, Europe, Australia, and South Africa. From the minutes of that Conference I have taken the following extracts:—

Colin Macdonald, Manager Institution for the Blind, Dundee—The problem of the employment of the blind is admittedly difficult—employment which will at once be a satisfactory solace and mitigant of the unfortunate position of the class, and provide work and earnings sufficient to maintain them in a degree of comfort and independence. . . . The employment problem still remains. To its solution the most intelligent, and practical experts have brought their knowledge and experience, but as yet no solvent has been found. It is claimed by some that the solution lies along the line of education and training. Certainly when blind persons have had the advantages of a thoroughly sound education in any of our highly equipped educational institutions, and an industrial training suited to their individual capacity, the highest results may be obtained, but all education and training which does not put its subjects in a position in which these will find their fullest development in useful employment, fitted to procure the means of sustenance, must be regarded as to a great extent not fulfilling its primary purpose. . . . It has been amply demonstrated that, unless in exceptional cases, if the trade rates only are paid to blind workers for their products, absolute starvation would often result. I think our blind wage-earners, who are fighting life's battle so heavily handicapped, deserve State recognition and assistance. . . . It is well known that the earnings of the blind, reckoned on the scale by which the ordinary artizan is paid, rarely yield a living wage; indeed, his unaided product has often to be sold at a loss. It is reckoned that in many cases 25 to 50 per cent. in excess of trade rates has to be paid to enable the workers to frank their weekly maintenance bill—hence the necessity for a special fund to regularly supply the needful assistance. The difficulty of finding new departments is accentuated by the fact that departments which were at one time regarded as pre-eminently fitted for the blind have now, through the changed conditions of labor, the widespread use of machinery, and other causes, become merely a means for filling up time, leaving the question of profit and even cost price out of the question. Added to this, there is the foreign competition, in brushes and baskets particularly, which has threatened the extinction of our home trade in those classes of baskets which the blind are found to do best and at which they can earn the highest wages. By way of remedying the adverse influence of the introduction of machinery and foreign competition in employments suitable for the blind, it is generally admitted that sighted labor should be more largely utilized. By this means more advanced work could be undertaken, the blind operatives being employed on that part of the work they can most quickly make and yield them the best return, whilst the whole would be finished by a

sighted artizan. What applies to the more advanced basket work is equally applicable to furniture stuffing and upholstering generally.

The primary education of the blind should include play. A large proportion of the ailments of blind children arise from want of active exercise, and well-directed play can do a great deal to alter this. Outdoor games are, of course, preferable, but not always possible. To provide for these it is essential that the grounds and playgrounds set apart for the children should be large and open. Large open playsheds should be provided for use in wet weather. An essential to the success of games (outdoor and indoor) is that the teachers interest themselves in their pupils' play, and closely supervise it. Mr. Illingworth writes: "There is nothing to my mind so beneficial or so much enjoyed by children and adults as a running path. Blind children absolutely lose the slouching gait and hesitation in stepping out after a few weeks' practice on the running path, properly constructed. There is competition here, and that is what is needed in blind recreation to make it attractive and interesting."

It must suffice here for me to say that the institution's work is not half done when a pupil leaves its doors at the completion of his training. Whether this matter be referred to as the Saxon system, After-Care, the Care System, or any other title, the principle involved is precisely the same.

Mr. W. H. Illingsworth, Manchester—I feel I cannot press too strongly the necessity for separating the young children from the older children and adults. I would like further to mention the very great value I found in bead work. Anyone who tries it will find that adults as well as children will learn the Braille very much more quickly if at the same time they take up the bead work and make up little objects in bead and wire.

Dr. F. J. Campbell, London—All my sighted teachers can teach Braille. When I get applications from teachers, and they say that they can teach the blind, I answer that I want a teacher who has natural aptitude and enthusiasm for teaching, and in a short time the information required for the special methods used in schools for the blind can be given to them. The children can be trained to become neat, active, and self-dependent. Many children when they enter school cannot dress or feed themselves. Great attention should be paid to the games and sports of the children. We take the children on a great many expeditions to the woods and fields, where they can gather wild flowers. They not only enjoy these expeditions, but gain much useful information.

Mr. A. B. Norwood, York—It would be well if institutions for the blind would take steps to interest the teachers and students of the training colleges and teaching centres in our cities and towns in the methods and appliances used in teaching the blind. The benefit would be two-fold. It might happen that some students would become so interested in the work as to determine to find their vocation in the education of the blind, and so lessen the difficulty which now exists in finding teachers for some schools; and, secondly, in the course of a short time teachers in ordinary schools would be able to deal more intelligently with the cases of defective sight which come so frequently under their notice.

Henry Stainsby, Birmingham—The higher education of the blind should be interpreted to include instruction in any profession, trade or handicraft, which may ultimately be used by the blind as a means of livelihood.

The higher education of the blind is not (except in a few instances) synonymous with the higher education of the seeing. Take an illustration: a young man, but for his blindness, has in him the making of a thoroughly

able draughtsman and mechanical engineer; on account of his lack of sight he has to fall back on some handicraft—say, basket-making. The higher education of this person, which should have taken the form of instruction in draughtsmanship and engineering, must now take the lower form of tuition in basket-making, but should be still classed as higher education. I am fully aware that there are some blind persons who can benefit by higher education strictly so-called, and become solicitors, ministers of religion, teachers, etc., but these compared with the vast majority of the blind only make them rare exceptions.

Mr. Tate—The subjects taught should include mathematics, literature, history, psychology, and such studies as tend to promote a well-balanced judgment and an energetic and powerful will. Those persons who are intended for any special career, as music, should also receive such a course of training and general culture as shall not only render their society agreeable and attractive, but enable them to fulfil their particular vocations with greater ease, acceptance and efficiency.

Music should be taught to all the blind who have taste, intelligence and a desire to learn. It is a matter of no little surprise to me that the violin, flute, 'cello, and other portable instruments are not regularly taught in all blind institutions. Even though such instruments might not be the direct means of bringing in a living to those who learn to play them moderately well, they would certainly be the means of employing delightfully and profitably many an otherwise dull and dreary hour, and also of giving pleasure to others.

I know full well the stock of old wifish arguments regularly trotted out by numerous grandmotherly good people of both sexes, on institution boards and off. They say "a little knowledge is a dangerous thing, and to teach a blind boy the cornet or the violin is tantamount to setting him up as a street and public house entertainer, therefore do not put such a dangerous instrument into his hands." Oh, those unco guid folk. To be strictly logical—which, by the way, such folk seldom are—they should not teach a blind boy to read Moon or Braille, lest by any chance he might make this knowledge of the raised characters a medium for bringing in the coppers from passers-by at the street corners.

We teach our sighted boys and girls to play all kinds of instruments purely for the sake of pleasure, not profit—that is to say, pecuniary profit. Why should we deny to our blind what we willingly give to those who have already so many pleasures?

In the higher education of the blind, let the trade or profession in view be what it may, strict business habits should be most carefully inculcated and enforced, and these, in addition to a good technical training, coupled with a knowledge of social requirements and usages, a smart and tidy appearance, and polite bearing, will enable an intelligent blind man or woman to go out into the world with confidence.

Mrs. MacNicol, London—I feel it a great honor and pleasure to have been appointed by the Committee of the Institute for Massage by the Blind to speak at an International Conference on the subject. The first great essential in any work to ensure lasting success is to do it well. This is now proved beyond all doubt as regards the blind in the work of massage. They do it well. As there is an ever-increasing demand for what is well done in every profession, it must clearly be to the public advantage to employ the blind as masseurs and masseuses. Our operators are carefully selected as to

health and fitness. They are taught in the same classes with the sighted. They hold the highest certificate of efficiency in massage that can be obtained in London before we ask the public to employ them. They have also, in a very marked degree, the natural qualifications for this work—delicacy of touch, power of thought concentration, magnetic influence, and, best of all, gentle sympathy, and the desire to do their best. Our society is only a few years old, and we have now 21 masseuses and 15 masseurs on our list, taken from various positions in life. Some are engaged in hydropathic establishments and some in private practice, and I have heard nothing but the greatest satisfaction expressed by those who employ them. While to us the thought is comparatively new, Japan has assigned this work of massage to the blind from time immemorial. But what concerns us most is, naturally, those who are nearest us. The blind, however painstaking and efficient they may be, cannot make a market for themselves, nor press their needs, and we who are interested in them know that machinery and other causes have closed many occupations against them in recent years. Christianity from the beginning has taught us to give the blind a foremost place as those we ought to help. They have very independent spirits and great courage, and we owe much to their example in this. The work of massage is a step towards independence. It is remunerative, and gives the operators variety of thought and bodily exercise. Let us help the blind to do a fair share of it, since, as I said before, they do it well.

Rev. Philip Bainbridge, London—One of our best industries used to be heavy baskets for house-builders and for sanitary purposes. Now, in London, the use of those baskets has gone off almost completely, as the sanitary authorities insist on galvanized iron. Another point is fresh employment for the blind. A shop assistant in Harrod's Stores fell blind. The manager found him a place as weigher of dried goods—sugar and rice—which he put in bags. He has held that place for two and a half years, and the manager tells me that they will be glad to answer any questions regarding him. Can more openings of this sort be found for blind people? No doubt it saves expense in cost of management to have large institutions, but I do hope that the idea of preserving the home life will always be kept in mind. With every institution there should be a certain amount of possibility that the blind may be able to live outside in their own homes, and not necessarily in institutions.

Mr. T. Taylor, Liverpool—I think, in regard to this question of work, that blind boys and girls, when admitted to a school for the blind, ought to be trained like sighted boys and girls, and go to work at least half time when they are fourteen years of age. The blind ought to be taught the work most suitable for the district they intend to reside in when they leave school. Instrumental music ought to be taught, but only to a few. I am pleased to say that I heard a short time ago from one of our former pupils that he was earning £150 a year as a teacher of music. Piano-tuning and repairing should also be taught; some of our old pupils are doing well in this branch. Some are taught basket-making and mat-making, but to my mind shoe-making is the best trade, and one of the most profitable to teach, and I am glad to say that it has been adopted at this school, and the results have far exceeded the expectations of the committee. This industry may be carried on in the workers' own homes with advantage. Our object ought to be to make business men of our pupils. I have one or two former pupils in the oil business, one of whom is doing very well, and has been able to purchase the house he resides in and the one next door. I would suggest that young

men who have not the ability to be taught a trade should, in towns, follow the shoe-blacking trade, which would be suitable and profitable. With regard to female labor, I think that Mr. Pine and Mr. Stainsby are setting us a very good example in the way of typewriting, basket-making, massage and weaving. I have introduced flower-making, for those who formerly had sight, with success, and, so far, it has proved to be a pleasant and useful occupation for young women.

Rev. H. T. G. Kingdon, Bristol—I think we want more trades for the women, who seem to have been to a large extent neglected until the last few years. They cannot earn very large wages at any of the trades we are teaching them at present. The stocking machine has been introduced with good results. We assist our girls as far as we can, and are aiming to make it possible for them to earn 6s. to 8s. a week, which is, I suppose, equal to what is earned by many sighted workers.

Mr. W. H. Dixson, Oxford—We have so often heard that a blind man cannot do this or that as well as a sighted man, that it is quite a relief to find something that the average blind man can do better than the average sighted man—and that something is piano-tuning. The average sighted piano tuner gets a very second-rate training. He goes into a small music shop and picks up a few tricks of the trade. You go to the shop and ask to have your piano tuned. By a remarkable stroke of business, you will find your piano tuned in half an hour. Now, no piano can be tuned in half an hour. The average blind tuner knows that, and he takes more than half an hour. I therefore make it my business to tell every one of my sighted friends that if they employ a blind tuner who has a certificate from a good place they will do better than if they employ an average sighted man. Again, it is not merely prejudice that blind men have to face, but the anxiety to make as much money out of that prejudice as possible.

Dr. Campbell, London—I hope that Mr. Macdonald will move a resolution to the effect that no blind tuners shall be sent out until they have passed a thorough examination and obtained a certificate. Tuning is one of the best employments for the blind, but if we send out tuners that are not thoroughly trained they will soon spoil the work for those who are capable. Mr. George Rose, our examiner, says that increased skill and competency are demanded from the sighted tuners, and that we must bring the work of the blind up to the same standard if we expect them to obtain employment. A superficial knowledge of tuning may be readily acquired by the blind, but a long course of careful training is essential to success. If a sighted man does a piece of work badly, it does not prevent another seeing man from getting employment. But if a blind man attempts to tune or repair a piano and fails, it is impossible for another blind man to get work in that vicinity.

Mr. J. E. Gregory, London—We know that there are numbers of blind persons who have been trained, and have become expert in various branches of industry, but, in spite of their training, they cannot find employment, for the simple reason that the institutions which are in existence at present are not sufficient to offer employment for all. That is very largely the reason why we see so many blind people exhibiting their infirmities in the streets, playing musical instruments and doing other things. I do not agree with the gentleman who spoke yesterday, and assumed that those who played musical instruments on the streets were those who had been trained for the musical profession. As a matter of fact, I know several cases of men who have been trained as basket-makers and as brush-makers who are playing musical instruments on the streets and in public houses, for the simple reason that

they cannot get basket or brush work. How is this difficulty to be met? There are many new industries that could be opened up to the blind. The only way to find new industries is by making experiments. Experiments are expensive, and they should be carried out and paid for from funds provided by the Government.

Mr. Alric Lundberg, Stockholm—It is generally acknowledged that our chief object when trying to ameliorate the condition of the blind is to widen, as far as possible, the spheres of their activity. Every new trade, every new profession, added to those we have in existence, is a victory won in the cause of the blind, tending to encourage further efforts in the same direction. It is on that ground that I beg to draw your attention to a new trade, namely, the trade of cigar making by the blind, which has been carried on in Holland with success for some time. Let me give you the chief features, according to the statements made by the president of the Dutch Training Association in the Hague: (1) This work is generally remunerative; (2) it can easily be done by sightless persons; (3) it is suitable both to men and women; (4) it may be carried on at home as well as in special premises; (5) it is necessary that one, and only one, sighted person should be engaged at the work-place to examine and classify the tobacco used for the cigars; (6) it is well to choose young blind men or women for experiments in cigar-making as a trade for the blind, as this handicraft demands a swift hand and a delicate touch; (7) the teacher chosen for the purpose might be chosen from the ordinary workmen at the cigar factory; he should, of course, be skilful in his work, and take an interest in his task as a teacher; (8) in Holland the teacher's salary amounts to 8 francs a week; (9) it has been found that one year is sufficient for a blind person to become a clever cigarmaker if he devotes two or three hours daily to the work. For my own part, I am certain that this trade will in time turn out to be a good and remunerative employment within reach of the blind.

Mr. A. Siddall, Rochdale—I believe there are more trades to be found for the blind, and it is our duty to seek them. It was such thoughts that caused me to take up the boot and shoe work. Some time ago, through the assistance of the Gardner Trust and the society I represent, I was enabled to go to Denmark to bring over the boot and shoe work to this country. I believe that if this trade is given a fair trial it will prove most successful for the blind. Its everyday demand is one of the great points in its favor, and it is quite possible for most blind people to do it with the assistance of the special tools, of which I have now copies. After four months I returned, making my own boots, though my teacher and I were ignorant of each other's language. Now, I do not suggest that the blind should take up this trade as shoemakers; I only suggest that repairs should be done by blind people; but in order that the work should be efficiently carried out I should suggest that every blind man, before being allowed to repair, should be compelled to make a pair of boots. By doing so, I find that my people are made sure of producing good work. I have two men who are now repairing for the public. I find that they are making quite a respectable wage out of it. I have one fellow who is repairing three or four pairs in a day. I think this trade is worth trying, and I only hope that those who take it up will give it a fair trial, or leave it alone. If a man is fully occupied, I think that he will make three shillings or four shillings a day of clear profit.

Mr. Ben. Purse, Manchester—In the vast proportion of cases you will find that the wages received by blind workers in this country are miserably insufficient to properly sustain the lives of those who are so working. I

do not attribute this to the negligence or the indifference of the managers of institutions or those connected with institutions. If you want evidences of the lack of employment you have only to study closely the census returns. The city of Manchester has a blind population of 472. Taking those employed in our local institution and those in various occupations outside that particular institution, we have not more than 90 who are employed, while in our local union we have more than 90 blind persons. We have 62 of our people forced on to the streets to gain a livelihood as street musicians, hawkers, etc. This is a pitiable state of affairs, and it is high time for the municipalities or the State to come to the aid of philanthropy.

Mr. J. C. Warren, Nottingham—We are all agreed with what has been said as to the necessity for new trades for the blind, and particularly for blind women. I was very glad to hear about cigarmaking, but the difficulty seems to be that we cannot carry on a trade of that kind in our institutions for a long time to come. We shall have to induce cigarmakers in our towns to take blind women into their works. As another means of giving employment to blind women, we have introduced Swedish hand-loom weaving into our Nottingham institution, and so far with satisfactory results. I hope that we shall soon see Harris tweeds made by the blind on these looms, and, if this can be effected, there ought to be a regular market for them. Some years ago we at Nottingham gave up the children's part of our institution altogether, and devoted ourselves entirely to technical education. When our pupils have become competent, we either employ them in our own workshops or send them to their homes, and look after them under the Saxon system.

Lieutenant-Colonel Selfe, London—Speaking at the annual meeting of our society, Mr. Gladstone said: "Employment to the blind is the condition of mental serenity, of resignation, and of contentment. Employment to the blind is also the condition of subsistence; that is, of honorable and independent subsistence." These last words are the crux of the question. We have men in our own workshops earning 30s. to 35s. a week. In that same institution we have a mat-maker. We asked one of the best known mat manufacturers in England the trade price per foot for the kind of work that our man does, the answer was a penny per square foot. Applying that rate of wage to our mat-maker, he would only earn 4s. 6d. a week. It is not to be supposed that any one imagines that even a single man can live on 4s. 6d. a week. I am happy to say that we give our man 18s. I would strongly urge the appointment of a committee of experts to consider this question of the employment of the blind, and to put some definite proposals before the blind world in general.

Mr. W. H. Dixson, Oxford—I believe that there is a general impression that in Japan massage is a monopoly of the blind. It was so until Western civilization was introduced, and now it has ceased to be so.

Mr. M. Priestly, Bradford—The better employment of the blind is a subject to which I have devoted much time and careful consideration for some years, and I have come to the conclusion that the greatest problem in connection with the whole subject is to provide the difference between the actual value of the blind labor and the price paid for such labor. With proper supervision we need have no fear about the quality of work done by the blind. A look round our exhibition will be convincing proof of this statement. It is, of course, in the quantity of work produced in a given time where blind labor suffers most. When employed on piece work, the blind must be paid at a higher rate of wages than that paid to sighted persons. In my own case, work in connection with Government and railway contracts has been de-

clined, not because we could not do it, but because the loss was too much. In negotiating orders it is strictly business, and rightly so. In making the goods it is largely charity, and, so long as blind people have to compete with those who can see, charity must enter into it in one way or another. It is useless to attempt to obtain higher prices for goods made by the blind than the prices charged by our competitors. A grant of £10 per head for each blind person regularly employed would soon place the institutions in a position to increase the number of workers.

Mr. M. G. Mackenzie, Inverness—We have successfully carried on the "Saxon system" in our large district. When a trade or occupation is acquired by any of the pupils trained in our institution at Inverness, on their return home every encouragement is given them to begin work on their own account, and the project has been most satisfactory. Material at cost price is supplied them till they are fully established.

Mr. J. Frew Bryden, Glasgow—We may get rid of sentiment here and face the fact that work among the blind cannot be carried on by any institution unless at a loss, which must be made up either from charitable sources or from the State. We heard to-day of a case of a man in an institution, whose work was only worth 4s. 6d., and yet he was paid 18s. a week. I think it would be possible to devise some form of unskilled employment that would fetch more than 4s. 6d., and this could be supplemented to some extent. Surely this would be better than the alternatives of the street or the poorhouse. With regard to work among women, we in Glasgow provide for nearly 140 women knitting in their own homes. These women get what is equal to 3s. a week.

Mr. Collingwood, Exeter—I should like to say a word or two on piano tuning. In the majority of institutions basket-making, mat-making and brush-making are the main source of their income, and piano tuning is merely a subsidiary matter. Now, should you put the same push into that as into the other trades, I think you will find that it will form a very good source of income. I am not going to ask where you buy your socks, but I feel tempted to ask, "How many members of committees of blind institutions have their pianos tuned by blind tuners?"

The following extracts are taken from a paper presented to the Edinburgh conference by Mr. Henry J. Wilson, Secretary of Gardner's Trust for the Blind, London:—For defective blind children no provision has yet been made. Their number is comparatively few, and they are scattered. Whether the child is defective mentally or physically, it demands a greater amount of individual attention than a child of normal physique and intellect, and, to that extent, of course, there is an undue demand on the time and energies of the teacher. The younger children (normal ones) are very imitative, and soon acquire the peculiarities of the defectives. Unless the defect is quite apparent the child should have a reasonable trial among other children. That the child is backward is often due to the early training, or rather want of training. This may be the result of simple neglect or want of interest on the part of parents, or mistaken sense of kindness shown by doing too much for the child, instead of teaching him to help himself. A judicious course of physical and manual training, rather than mental work, should, in the first instance, be the chief feature of the curriculum. The main cause of the prevalence of defective children is the utter ignorance of mothers relative to the feeding, clothing and care of children. The leading characteristics of the feeble-minded are those of fear, together with a deep cunning, and an abhorrence of noise. They are

very susceptible to the influence of kindness. There is a class of blind children—muscularly feeble—whom we cannot reckon as physically defective, but who have so little use of their fingers as to make hand-work a matter of extreme difficulty. They are mentally sound, and their case is, therefore, all the more piteous and difficult to deal with. As a rule, the "defective" blind are afflicted in one way or other, or in several, of the following ways:—Slow in perception, lacking in truthfulness and reasoning and muscular power, of strong immoral tendencies, of unclean habits, peculiarity of speech and indistinctness in articulation, destructive, extremely active or extremely inactive, weak in will power and prone to uncontrollable fits of temper, stubborn, and requiring coaxing, feeble and slouching in gait, quaint movements of head and body, slow circulation, cold, clammy hands, but, generally speaking, they are of an affectionate disposition. It is difficult to draw an exact line and to say who are mentally defective, as the limits are still undefined, ranging, as they do, from the ordinary stupid person to idiocy, the former being probably a fit subject for an ordinary school, and the latter for an asylum. Much care should be exercised before children are removed as defectives from the ordinary school. A good many defective blind children have come to me in the course of my experience, who, if they had been treated by their parents in the same manner as other children, if they had been given ordinary exercise and little duties to perform, would not have been defective either mentally or physically. You all know that a blind child is very often left the whole day long sitting in a corner, and I can cite cases where a child has actually been kept in bed most of its life till it was ten or eleven years of age to keep it out of harm's way. That child is bound to be mentally and physically defective. I should like to mention one of the things I found of the greatest use at West Craigmillar in remedying physical and, I believe, mental defects—those peculiar movements, twitching of hands and face, so common to the blind. Try the experiment of making the blind child lie down on a flat back board for half an hour each day, or twenty minutes twice a day. It has a very remarkable effect, and quickly eradicates not only a tendency to spinal curvature, but many habits of twitching, swaying and the like. Very few parents can be convinced that their children are mentally defective.

GIVING THE BLIND A START.

Forty-eight years ago the first society in Scotland for dealing with and teaching the blind to read in their own homes was formed in Edinburgh. Ten societies, or missions, so distributed as to practically cover the whole country, are formed into a union called the "Scottish Outdoor Blind Teachers' Union." The societies in Scotland have never started workshops on their own account. They have always felt that workshop employment was the function of the institutions and asylums, and have tried to do their part in securing employment on other lines. The risk to employers under Workmen's Liability and Compensation Acts is making it increasingly difficult to find any employment, and yet the variety of situations which are secured is somewhat remarkable. Among the men we find missionaries, commercial travellers, stair lamplighters, night watchmen, straw-rope makers, bolt and nut cleaners, bottle washers and laborers. Among the women we find a factory worker, a hair-teazer, a pirn-winder, and a soloist in the Salvation Army. It will be seen from our statistics that the largest proportion of men we are brought into contact with lose their sight near

or after middle age. The experience of our Societies has shown that in such cases, if the general health of the applicant is good, and there is a reasonable amount of capacity, help to begin some simple form of trading is the best way in which assistance can be given. Where a sufficient amount of energy and perseverance is forthcoming the results are generally quite encouraging. Some judgment must be shown in selecting cases for this kind of help. Even among the most likely it has all the risks of an experiment. The forms of trading most generally engaged in are smallwares, tea, and drapery goods. These are the most easily started, and bring in an immediate return, which additional experience and assiduity make an increasing one. The varieties of occupations engaged in are often suggested by some experience before they lost their sight, and in other cases by the individuality of the trader himself. We have traders in coal and firewood, fish, fruit and earthenware; some trundle the lowly barrow, while others aspire to the dignity of a pony and cart. Some have to secure and pay for guides; others, more favored, have active wives or members of their families, whose help and co-operation greatly facilitate their business. Among the forms in which others are engaged we have cutlery, saw-dust, books, oil, photographs, and other articles. I could give selected cases from among those whom we have helped who are now reaping large incomes, and some who have retired with a competence. We have at present 190 traders on our roll who are carrying on trading as the result of grants received from our Society. Grants are given according to the special need from £2 to £10. Last year the sum of £207 was expended in this way. In a number of cases help has been repeated to tide over times of difficulty. Several investigations have shown that the average income of these traders is 10s. per week. This represents a total annual income of £4,949. The result is very gratifying to the traders themselves, and represents a very distinct contribution to the income of the blind of Scotland.

It is an interesting fact that 86 blind persons are known to us in Scotland as following various branches of the musical profession. Inquiries I have made bring out that nearly all who have been trained for music are able to maintain themselves, while there are several brilliant successes. One result of inquiry I have made also shows that few have lost their position and self-respect, or drifted into the vagrant or mendicant class. I have made up a column which includes those who are engaged in what may be called "home industries." Very few of these were trained in institutions, or follow the occupation for which they were trained at their own homes. This, however, is not at all usual in Scotland. In one district, the making of fishing and lawn tennis nets gives employment to a few; one man has a hen farm, another is engaged in breeding pigs, two are engaged in farming, one makes leather tabs for mattresses, another makes iron skewers for butchers. A man in Islay engages in lobster fishing, and another in Glasgow makes a good income by manufacturing clasps and hasps from old meat tins. Such employments show an amount of alertness and inventiveness that is most praiseworthy, and suggest a field of possibilities for those who care to work their minds round the problem of possible employments for the blind. The largest number of those whom I have described as "otherwise employed" are women, and are engaged in knitting in connection with our different Societies. Wool is supplied and payment is made for the knitting, which is done by the women in their own homes. £408 was paid last year to 150 knitters for work done, the Ladies' Auxiliary taking the responsibility of disposing of the varied stock of knitted goods in their sale shop.

I have put the 129 who make their living on the streets in a class by themselves. They include those who have drifted from institutions and other employments, but who took to the streets in the prospect of a free and easy way of living. In most cases the influences are entirely demoralizing. Among the best of them a distaste of any steady work is a marked feature, and although attempts have been made, we can scarcely point to a successful experiment in lifting one from the streets into any regular employment. We have known street musicians and readers who preserved their respectability and character, but the temptations to indolence and dissipation are so great that every effort should be made to prevent such a way of living being adopted.

I will not dwell on the position of the 333 persons who are inmates of our poorhouses. I think in all cases where our respectable poor blind people are struggling on the margin of utter poverty every effort should be made to enable them to preserve their self-respect and maintain their little homes. Where the circumstances, however, are not such as to warrant outdoor relief from the parish, I am glad there are such shelters as our poorhouses. If our institutions could devise and provide some simple form of employment that would not require long training they would meet the case of many middle-aged men who can at present scarcely be kept out of the poorhouse. The proportion of our outdoor blind who need temporal assistance is very large. Scotland is not favored, as England is, with Pension Funds for the Blind. Our Societies have the machinery, but not the means, to deal with this matter of pensions, though they have no lack of suitable cases. In various forms of benevolence £2,500 was given by our Societies in Scotland directly to the blind, and we know of at least an equal amount that reaches them from other charities. I would here plead for a Pension Fund for the Blind of Scotland, speaking as I do in the capital of the land.

W. H. Tate, Bradford:—At the time of the Royal Commission of 1889, upwards of 8,000 blind persons, above the age of 21, were in receipt of relief from the guardians, of whom no less than 3,278 were resident in workhouses or workhouse infirmaries. There are many blind persons whose physical strength or mental endowment is below the average, as a result of the causes which have produced blindness, but who are nevertheless capable of learning a trade and of doing something towards earning their living. Though fairly industrious, regular and attentive to their employment, however, they are such slow workers that they can never earn the whole sum necessary for their maintenance. For such persons to receive a little systematic "necessary relief," as a supplement to their wages, would seem to be a reasonable and desirable arrangement. On the main issue that many of the blind, even if they are energetic, can never support themselves by their earnings, I suppose we are agreed. If that be so, some one must, and I suppose actually does, supplement, or there would be partial starvation.

Dr. A. W. G. Ranger, London:—The appalling fact to which I first wish to draw your attention is that there is a very serious proportion of the blind now spending their lives, and, as far as they know, the remainder of their lives, in the workhouse. My own feeling is that there is an obligation upon the various Christian churches of this land to clear the unions of all the blind that are in them.

Mr. H. Stainsby, Birmingham:—I never look to find out what the turnover of an institution is, but what the blind are getting out of it. When

I turn to the Dundee report I am met by the striking fact that the blind workers of Dundee get over £2,000 a year from the trading department. The school department, it is true, is small. I am delighted to know that there are vacancies in the school. I said to one of the ladies who was walking round with me, "I wish your school were empty," and she said, "So do I." Unfortunately, in some parts our schools are congested. I am delighted to know that in Dundee you have places waiting for these little children. Mr. Macdonald told me to-day that one of the most interesting parts of the work here was the work among the little children. We cannot go into the school-rooms without being always affected by their blindness. It is a sad thing to think that these little children must be in darkness for the whole of their lives, that they are past cure, and that all that medical skill can do for them has been unavailing. It rests with us, Christian philanthropists, to do our level best to make their lives happy and to give them the opportunity of becoming self-supporting.

Mr. Pine, Nottingham:—It has been clearly shown that the industrial side of the work for the blind in Scotland is greater than it is in England. The most important question at this conference has been the employment of the blind. We have been shown what can be done for the employment of the blind at Dundee, and I think we have had great examples put before us wherever we have gone in visiting these Scottish Institutions.

Mr. G. S. Wilson, Indianapolis:—I think I can safely say that in the United States we have students who will compare very favorably in the way of literature and music, but we are behind in the industrial features.

Mr. J. P. Kruger, Cape Colony:—I have been very much impressed by finding so many ladies and gentlemen who give their time and patience to the work of the blind. It is the same in South Africa. I find it is uphill work all over the world.

Miss M. Field, Oldham:—I should like to mention two employments which have not been spoken of this morning: one is tab rug-making and the other the manufacture of string bags. The latter has been a great success. The apparatus is quite simple and easy to manipulate. The girl who makes string bags came to me straight from school, and on an average she has earned 5s. a week, and the last few weeks it has been 8s. I pay her 5d. for each bag and sell it for 1s. The girls are not boarded but they are given a dinner every day.

Mr. Colin Macdonald, Dundee:—We have come to the end of a most interesting discussion on a most important subject, but we have not come to the end of the subject itself. I have the honor of moving the following resolution:—"That the problem of the better employment of the blind is of such vital importance and consequence that a National Committee be appointed to consider the questions raised in the paper this morning and the subsequent discussion; the selection of the Committee be left to the Conference Committee."

Mr. H. W. P. Pine, Nottingham:—I should like to be allowed to second this resolution. I think the better employment of the blind is the most burning question we have before us at the present time. The education of the blind is now well assured. What we most require now is opportunities of thorough technical training for them, to be followed by greatly increased facilities for their employment. If we can do something to ensure that the employment of the blind shall be put upon a better footing, then we may rejoice that this Conference has not been held in vain.

IN THE UNITED STATES.

It is generally admitted that Great Britain and several countries of Europe are in advance of America with regard to the industrial education of the blind, and in provision for the adult blind. But that branch of the work is beginning to attract more attention in the United States. In my Report for 1905 I gave a summary of the findings and recommendations of the special committee appointed by the New York Legislature to investigate the condition of the adult blind of that State and to report on the expediency of establishing industrial training schools or other institutions. A Conference of the American Association of Workers for the Blind was held at Saginaw, Michigan, in August, 1905, from the report of which the following extracts are taken:—

Charles H. Jones:—Regarding blindness, both blind and seeing people are coming to understand, that blindness of itself is no valid excuse for idleness or pauperism. Blind children are being taught that their parents, friends and the state expect them to develop into useful, self-respecting, independent men and women: that by the great law of compensation, the lack or loss of one sense may be largely met by the increased development of the others.

Progressive steps, marking as they do an ever-advancing Christian civilization, led thoughtful people to consider the condition and needs of the adult blind. As the result of this consideration and investigation it was discovered that many who had spent from six to twelve years at some school for the blind, while possessing a good literary education, and with minds cultured and broadened by the opportunities they had enjoyed, were still unable to utilize any of their accomplishments to the extent of obtaining a livelihood, and without home or friends were compelled to take refuge in an almshouse or to become mendicants upon the streets. Further investigation discovered another fact, of which the public is still to a very large extent profoundly ignorant, that of the blind people in any state a very large proportion (some estimate at least two-thirds) lose their sight either by accident or disease after they are nineteen years of age, or beyond the age limit in most states for entering the ordinary schools for the blind; and, even could they enter, such a curriculum as these schools present would not be what is needed by these people, many of whom have families depending upon them. Conditions like these, when properly understood by an enlightened public, will not long be allowed to continue.

Every pupil graduated from schools for the blind should be proficient in one or more useful industries, as well as in the literary work to which attention has been given.

While the number of occupations open to the blind is necessarily limited, still from time to time new ones appear, and without doubt as people become interested in the subject and the blind themselves demand opportunities, many hitherto unthought of avenues to usefulness and profit will be opened.

Of the children attending schools for the blind, as of those attending schools for the seeing, only a small proportion will ever be able to obtain their living by what we call a profession. By far the larger number, if self-supporting wholly or in part, must become so through the use of their hands.

Schools for the training of the adult blind should be established in every State; not to supersede the schools for blind children already established, but to supplement them. They should open a door of hope to those

who lose their sight after passing the ordinary school age, by affording them an opportunity at the expense of the State to learn some branch of industry by means of which they may become once more independent. They should also receive such pupils from the schools for blind children as, having pursued their regular course of study, are evidently not calculated to succeed in a professional life, but need an industrial training to prepare them for future independence and usefulness.

Connecticut occupies the proud position of being the pioneer State to provide by legislative enactment for the instruction of her adult blind. Michigan has followed her example, and the day is not far distant when provision for the adult blind will be made by every State.

O. H. Burritt:—Three-fourths of a century ago there were only three institutions in the United States for the education of the blind. To-day there are in the United States and Canada over forty such institutions.

According to the last report of the American Printing House for the Blind, at Louisville, Ky., there were registered in 1883 in the schools for the blind then in existence in the United States 2,442 pupils, while in 1905, 4,422 pupils were receiving instruction in the forty-one schools in this country. Moreover, in 1883 probably every institution then in existence had enrolled among its so-called pupils a very large percentage of the adult blind who were there, either in order to be provided a home—whence the still quite generally prevalent notion that an institution of any kind for the education and training of the blind is an asylum, and that our schools for the blind are charitable institutions rather than an essential part of our public school system—or to become proficient in some trade or profession supposed to be available for blind people. To-day, with very few and notable exceptions, these schools enrol only pupils of school age, *i.e.*, boys and girls between the ages of five and twenty-one years.

There are only ten States in the Union that have not provided some kind of institution for the education of the blind. Only about one-tenth of the blind of the United States are of school age. The Commission found that in the State of New York only 9.72 per cent. are of school age, that is, under twenty-one years.

Mr. Allen:—A kind-hearted superintendent in Philadelphia once started a home department, which soon preponderated. Then came a good working home for blind men; a home for women was also established; the home for men has a waiting list; married men live outside; the men are paid more than they earn; such an institution cannot be self-supporting. Thank God! Philadelphia does not pension the blind, and I do not think the self-respecting blind wish it.

Oscar Kuestermann:—After the Legislature of Wisconsin, during its 1903 session, had wisely provided for a workshop in which the adult blind of our State were given a chance to become self-supporting and to earn their own livelihood, the question arose what branch of industry, what trade would bring the best results. Broom-making was not considered, because the competition in this line was too great and margins cut down to a minimum. Mattress making was thought of, but when it was ascertained that machinery is now largely employed in this line, and prices materially reduced in consequence, we came to the conclusion that this idea would also have to be abandoned. Chair caning was not considered a trade. Looking over the reports of foreign institutions for the blind, we found that of all the lines in which the blind were employed, none promised better results than the manufacture of willow ware. When our shop was

opened in December, 1903, we started with four apprentices, and since then have had thirty-nine blind men on our pay-roll. A few of them left soon after entering, because idleness or the following of some other occupation was given the preference. The great majority of our workmen remained, are happy and contented, and glad of the chance to earn their own living and to enjoy the blessings of work. On entering the workshop the first work taught our men is the making of doll buggies. This enables them to learn the setting up of willows, the fitching of reed and the different closings of the rims, all work which is the foundation of basket making. The first day of work on the buggies varies according to the skill of the men, some succeeding in making four to five buggies a day, while others, less apt, make from one to two. The amount allowed for each buggy is two cents net. In this way the first week's earnings vary from 30 to 60 cents. In the course of one or two months the men are able to make ten to twenty buggies a day, their earnings being from $1.20 to $2.40 a week. After becoming experienced in the making of doll buggies our men are put to work on plain baskets, an employment which is more remunerative. In course of time their work includes clothes baskets, hampers, office baskets and all kinds of specialties. All of our workmen are taught from the beginning that all work must be well made.

A statutory provision recently enacted authorizes the State Board of Control to furnish indigent blind artizans, who are not residents of the city of Milwaukee, board and lodging for a reasonable time, and also provide means of transportation from any point within the State of Wisconsin, so as to enable them to learn a trade and become self-supporting, such allowance not to exceed in any one case the sum of $75.00.

The average weekly earnings of all our men for the first six months was $2.32; for the next six months, $3.73, and for the last six months, $4.20. The weekly average of six of our best workers is $6.12, and the highest amount earned in one week by any one in our shop was $10.30. The earnings of the men consist of the difference between the cost of material and the selling price of the finished product. The State of Wisconsin simply furnishes the necessary manufacturing room, salesroom, warehouse, fuel, tools, and pays the wages of the superintendent and instructors. While up to the present time only men have been employed, it is our intention to find out some occupation for the blind women of our State, the last Legislature having appropriated the necessary funds for this purpose.

Mr. Kuestermann thinks the lazy man would not work in a home where maintenance is given free; in a workshop a man who does not work does not earn, and he will soon find out that it is either work or go to the poor house, if he has no other means. Women could not succeed as willow workers.

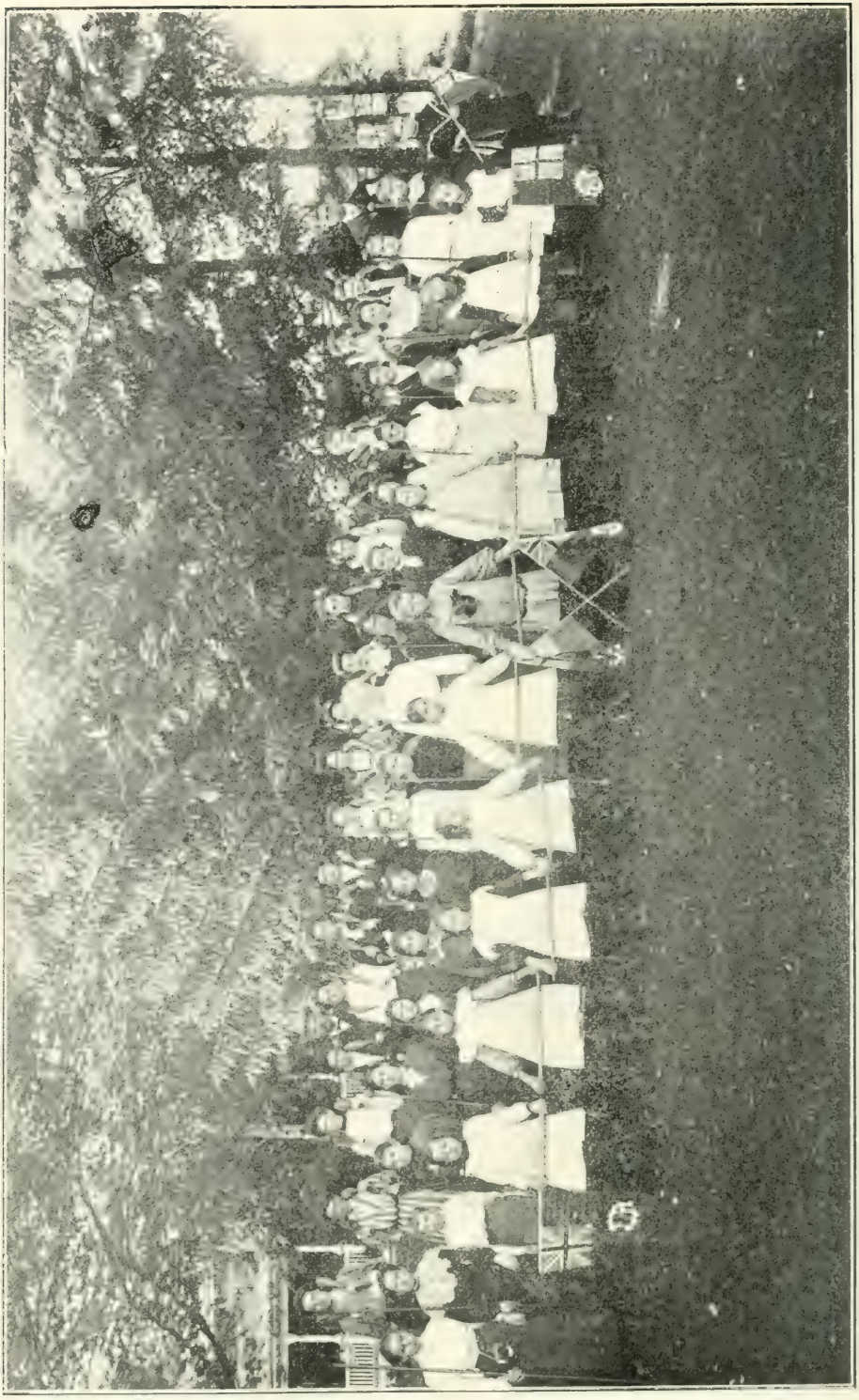
Charles F. F. Campbell:—It is a significant fact that of the 65,000 blind persons in the United States less than 5,000 are attending schools. This small attendance results in part from the non-enforcement of the compulsory education laws and to a much greater extent to the fact that of the 65,000 over 75 per cent. are adults and have become blind long after school age. Of this large group of adults nearly half are over sixty years of age. For the aged blind, little can be done except to brighten their lives. For the group of unemployed able-bodied blind people between the ages of twenty and about fifty, little has been done of a practical nature in the United States, as compared to the work in Europe. On the other side of the Atlantic, work shops for the blind are quite as numerous as

schools. In this country Industrial Institutes are needed where those who are unqualified to benefit by the training in the schools for the blind and those who lose their sight beyond school age may be taught some trade. It is arbitrary and unprogressive to say that sewing, knitting, chair caning, broom, basket and mattress making are the only industrial lines of work open to the blind. The vital question is, what remunerative occupations are available for them? For the women, modern hand weaving deserves thorough testing. Another shop industry is the manufacture of a patent broom for cleaning the switches of street car tracks, and mops. It is folly to attempt to cast all the workers in the same mould. When enough pupils have learned a given trade they should be assisted to start a small workshop on a business basis in some city near their homes.

C. S. McGiffin:—The Indiana Industrial Home for Blind Men is a private enterprise, located in Indianapolis. It is only a workshop where blind men are employed at making brooms. This institution was organized and incorporated in 1899. The funds with which our factory is operated are secured by subscriptions. Some of our men earn as much as $7.00 or over a week, while others can earn scarcely $4.00 a week. Our pay rolls show an average earning of about $5.10 for each man a week. The most of our workmen have learned a trade at the State School for the Blind, during their youth, but are not competent to operate their own factory, and, like the majority of men with sight, they prefer working for others. But there is another class of unfortunates, who are perhaps more needy in many instances than those whom we are now employing. I mean those who have lost their sight since becoming of age and are not admitted into our state schools for blind children. We are constantly receiving many requests from both married and single men, ranging in age from about 25 to 50, and over, who have lost their sight mostly by accident, and who are unable to maintain themselves while learning a trade. For the benefit of this class, we have twice placed a bill before our State Legislature. This bill provided for the maintenance of not to exceed 20 adult blind men, at any one time, at the rate of four dollars per week for each, and only for a period of two years. In 1903 this bill was vetoed by the Governor. It was introduced again, but was fought desperately by the labor organizations and failed for a second time.

Esther J. Giffin:—At the Edinburgh Conference an especially valuable feature was an exhibition of work done by the blind, contributed by 27 institutions. The industrial work was well done, and the institutions give employment to hundreds of sightless persons, but most of it is done at a loss.

Charities and the Commons:—Dr. Howe, the great pioneer in work for the American blind, clearly saw that there were two problems in helping the blind—the one distinctly scholastic and the other industrial. To-day we still have in the mattress shop, started by Dr. Howe, one of the best examples of a successful industry for the blind. Unfortunately, the general public, blinded by their wonder at the fact that the blind can even be taught to read and write, failed to uphold the early superintendents in their efforts to satisfactorily solve the industrial problem. As a result the line of least resistance was followed, and to-day we have 4,500 children being educated and very few men or women over twenty years of age receiving trade training. This state of affairs has, largely as a result of the cry of the blind themselves, become more and more clearly recognized, culminating in the appointment of such commissions as have recently



Physical Culture Class on Bowling Lawn, O.I.B., 1906.

served in New York and Massachusetts. The literature of the movement is not, as yet, large. A first step is a demand for facts—to find out who the blind are, their age, the age when they became blind. These investigations are showing that the same needs which characterize different classes of the seeing—the vigorous, the thriftless, the industrious, the anæmic, are to be found among them; and that from the standpoint of the community the significant fact is not lack of sight—which in an intellectual and æsthetic sense can be largely overcome by the methods of the schools—but their insulation as members of economic society. Therefore comes a demand that the scholastic institutions dealing with blind youths prepare them more concretely for after life. The third step is a demand that agencies be devised to train industrially those who become blind after maturity—not, in most cases, as permanent industrial backwater groups where the inefficient may be cared for because of their sightlessness—but as way stations through which the trained blind may gain a footing in the community life of their generation. It will be seen, therefore, that to the general public one of the most urgent appeals is for a new attitude toward the blind. That attitude can best be stated in these words of a superintendent of one of the most progressive American institutions in this field:

Everyone realizes the blessing of sight to such an extent that he is scarcely able to think rationally of blindness.

We who are surrounded by the blind do not fail to realize some of the terrible consequences of the affliction; we never become hardened to the condition, but, as physicians do, direct our sympathy into channels that are practical.

My interest in the adult blind is neither sentimental nor pathological, but simply sociological. I might tell you of old men and women in pitiable plight, but they are often over eighty years old, and would be nearly as badly off with their sight; again of a graduate of a school for the blind who may have been afforded the utmost advantages the school can give and yet be unable to support himself, but he is likely to be diseased in body or perverted in mind or to have defects of character which would make his success impossible if he had the best of sight. I am not ready to generalize or to give an answer to the problem until I know all the elements of it. It is like a question in proportion in many terms, the distress of individuals being but one term. I have great fear of movements started by those whose eyes are too full of tears for perfect vision or whose hearts are so large as to take all the blood which belongs to both the heart and head.

Helen Keller:—Opportunity to work is what we ask, not charity. We know from experience that the blind can be made self-supporting. To assist the blind to attain self-competence not only endows them with happiness, but relieves the State of the burden of their idleness. Contrast the beggar at the street corner with the self-supporting, self-respecting blind citizen, and ask if the transformation from one to the other is not a gain to you and to me as well as a veritable re-creation for him.

The current report of the New York State Board of Charities Committee on the Blind states that "the experience of the two schools of the blind in this State has been that those who make the best use of the scholastic years are best fitted on graduation to enter into ordinary business competitions and activities, hence the greatest stress is laid on thorough scholastic training; and although the schools find it necessary to furnish a certain amount of industrial drill and trade instruction, this branch of the school work is regarded as of secondary importance."

The committee's report states elsewhere that the "industrial or trade instruction is left largely for the years between twenty-one and thirty, when it usually becomes the major interest. In the institutions the occupations are limited, and even when the blind become expert, do not afford large enough returns to satisfy reasonable desires."

Dr. F. Park Lewis:—For every blind man placed upon his feet and made independent and self-sustaining, the gain to the state is enormous. He becomes an object lesson, an inspiration to those similarly afflicted, a help and an encouragement to the disheartened and hopeless. The blind man who, while still well and strong, becomes a pauper, is not only a burden upon the charitable, but a pernicious element in the community in that he unconsciously influences the weak and the lazy to beg, when they should work, to lean, when they should stand upright.

While among the blind there are always a few who, by reason of natural gifts or unusual opportunities, will succeed without outside help, the large majority are merely average men and women. When blindness comes suddenly the man is at first stunned, then confused, then appalled by the apparent hopelessness of his position. He had always depended upon his eyes to guide his every movement; and when he finds that sight is gone, there comes a sense of utter helplessness. His usual movements are imperfectly co-ordinated and his attitude and gait take on an exaggerated awkwardness. In the manual laborer, the brain action is not usually rapid. The routine muscular movements under the guidance of the eyes have become largely automatic. When one element of the associated functions is taken away the movement of all becomes hesitant and uncertain. Then rapidly follows loss of self-confidence. The man can no longer do the simple things that he had all his life done, although sight is not required to do them. He cannot walk freely and rapidly on an unobstructed surface, although he is assured that he may do so without danger. He must be readjusted to the altered position in the world in which he finds himself. It is the critical period in his new life. He must be taught to believe in himself. He must find himself.

There is a tide in the affairs of blind men which must be taken at the flood. After blindness becomes an established fact in the adult every month in which he is allowed to remain an aimless sit-by-the-fire makes more difficult his ultimate reclamation. It is at this exact time that friendly intervention is most readily accepted and is most useful. He must be shown that blindness and helplessness are by no means synonyms. He has never before this been interested in blind people. He has never dreamed of a blind man working with his hands or with his brain, or both, at some remunerative employment. He has yet to learn that men who cannot see can yet make beautiful willow baskets that bring good round prices and that blind women can and do weave exquisite fabrics fit for household use. He is at the crossing of the ways, but he is not going to remain there indefinitely. One road leads to activity, to potential, if not actual, happiness—to occupation, man's mental, moral and physical salvation—the other leads to apathy, mendicancy, loss of self-respect, often loss of character. Which road he will take after a comparatively short period of hesitation will depend partly on the man himself, largely on the inspiration given him from outside. He must have his belief in himself re-established. He must be shown what the blind can do, what he can do—how he can do it. All of this new knowledge must be brought to him and he must be made to feel that the world has a place for him which he must be fitted to fill.

But, for this, training is necessary. The old habits must give place to new ones. The old trade, that of a stonemason, perhaps, or of a carpenter, must be exchanged for the new one for which eyes are not so necessary—that of a broom maker or of a chair caner. Here, unfortunately, at this critical point in his career, he turns to us in vain. We have schools for the young blind, but for the man or woman to whom this frightful affliction has come—up to the present time no adequate provision has been made.

The immediate need is the industrial school. The blind man is facing a new life. He is as unfitted as a child to meet it alone. He must be taught to use his hands and his head in a new way. He must be inspired by being brought in touch with other blind workers who have succeeded. His aptitudes must be studied and the work for which he is best suited chosen for him. Then he must be encouraged, set to work, taught the trade in which he is most likely to succeed. Shop schools should be established in various centres of population. They should be maintained by the state and should be work schools simply. They should be under one general and uniform supervision. These should not be allowed to become homes, and only those should be admitted to their benefits who are mentally and physically capable of profiting by a limited course of instruction. Many of the blind require charitable aid, but this should be administered through other channels.

Charles F. F. Campbell:—The purpose of every school for the blind, while equipping its pupils for the life they are to lead, ought also to aim definitely to make its graduates self-supporting. If the present system is not accomplishing this, it is high time the matter should be discussed. More should not be expected of the blind child than is expected of the seeing. Most blind children come from that class from which is recruited the vast army of industrial workers. It is unreasonable to try to make professionals out of those who, had they sight, would become artizans or laborers. One of the reasons why workshops for the blind have not paid has been that charity, correction, education and business have been hopelessly mixed. There ought to be fifty lines of industry open to the blind, instead of less than ten. Homes for the able-bodied under fifty years of age seem to be inexcusable. No person should be sent to the poor house because he is blind, but, on the other hand, blindness should not keep him from where, under similar circumstances, he would be if sighted.

Lucy Wright:—The blind need more instead of less education than the seeing, and adults becoming blind need immediate encouragement to work. Otherwise they fall into idleness, ill-health and even danger, and the feeling that blindness makes questionable occupations legitimate continues to grow.

E. P. Morford:—First, there is a class who are capable of supporting themselves without the aid of any organized effort in their behalf. Second, there is a class who are capable of self-support if started with the aid of organized effort. Third, there is a class who, although they strive earnestly, are not capable of supporting themselves without organized effort. Fourth, there is a class who, with or without organized effort, will not try to support themselves, but rather expect their support to come in some way from the public. The Industrial Home for the Blind of Brooklyn has taken hold of this problem in a practical way by establishing under its roof workshops for blind mechanics, with a home or boarding house attached. The home is not self-supporting and is dependent upon the contributions of persons who are interested in its welfare. It does not receive city or state aid.

The inmates are expected to pay $2.75 per week for their maintenance. Idlers are not wanted. About 35 per cent. of the workmen are married and live in their own little homes with their families.

J. P. Hamilton:—The Lansing school tried at first to meet this demand (for industrial instruction of adults), but these endeavors, which at best only could benefit a few of the many who needed such aid, so imperilled the usefulness of the school as a moral and intellectual educational institution for the youthful blind and also resulted in such financial loss, that these efforts to assist the older blind were entirely discontinued. The problem of how best to care for and help the adult blind has not been solved. The work is new and necessarily in more or less of an experimental stage. There are many pursuits which blind people can follow, but very few which can be followed with enough rapidity to make them practical as life work. To illustrate: Blind girls are perfectly capable of doing the best kind of work with ordinary knitting machines such as are used in all knitting factories, but they work so slowly that they cannot make wages enough to keep themselves.

C. F. F. Campbell:—All over the world can be found workshops for the blind. If it was only possible to find some article requiring a large amount of hand work which could be patented and held exclusively for the blind, our problem would be solved.

A WORKING HOME FOR THE BLIND.

Mrs. C. R. Miller, in *Leslie's Weekly*, 29th March, 1906.

One of the serious problems confronting philanthropy is the care of the indigent blind. The best system along this line yet devised seems to be the one adopted by the State of Pennsylvania, which not only provides food and shelter for these unfortunates, but also some employment to divert their minds from their affliction, to keep them from becoming street beggars for the benefit of others, and to enable them to earn enough to be practically self-supporting. The Pennsylvania Working Home for Blind Men was the first, and is still the largest, of its kind in the United States. The home is situated on Lancaster Avenue, in West Philadelphia, and consists of three substantial buildings—the superintendent's cottage, a large house where the men who have no families may board, and a four-story factory, 212x90 feet. The property, which is enclosed in a spacious yard, is valued at $283,000. As broom making seems to be the best possible employment for the blind, the principal part of the factory is given over to this industry.

While it is impossible for a blind man to complete a broom, he is able to do three-fourths of the work—more in this than in any other trade. Experience has shown that nearly every blind man, no matter how unskilled, can learn to size broom-corn—that is, he can sit at a machine which has a number of raised measure marks and a knife worked by a treadle. With this he prepares stalks for five different sizes of brooms, and places each one in its proper rack. This work is usually done with great rapidity and fingers are rarely cut. Ninety per cent. of the men can sew a broom, and about fifty per cent. can learn to wind. The latter seems to be the most difficult for sightless eyes, yet there is a man at the home who is deaf, dumb and blind, and who winds a broom perfectly. He selects the proper length of corn from the boxes at the side, twists the wire around the

handle, hammers in the tacks, and finally with a sharp knife trims the edges. This man, who is now about thirty-two years old, has been in the home for eight years, and his wages average five dollars per week. When communication with him is necessary, it is done by writing with one's finger on the palm of his hand, which he understands readily. He is apparently happy and contented, works steadily, and has saved some money. One of the "sizers" is also totally deaf, and so keen is his sense of feeling that the men frequently write with their fingers on his back or arms the words they wish to speak. At one of the tables an interesting blind youth stems the corn, selecting the rough pieces for the inside of the brooms. This young man is also a fine musician, and spends many evenings at the piano in the home, much to the delight of the less educated.

One hundred and nineteen blind men are working at present, and, with the assistance of twenty-five who can see, they have in the last two years manufactured more than a million brooms and received in wages about $56,000. An average week's work amounts to about $7, although some have earned $15. Four hundred tons of Illinois broom-corn is used each year, and while the principal market is in New York and Boston, a large consignment was recently shipped to Dublin, Ireland. The brooms manufactured are of good quality and retail from forty to fifty cents each. No imperfect goods are put on the market, as the men are taught that the laws of the business world are stern, and that the merchant who to-day signs a cheque as a donation to the institution which shelters them would to-morrow refuse to buy their product if the workmanship was inferior.

The scenes in the factory are little different from those of any other. The men laugh, sing, and tell jokes. They know the sound of each other's footsteps—especially that of Mr. Geo. W. Hunt, the superintendent, who joins in their pleasures and comforts them in sorrow. A number of the men have families and reside near by, while many who learned the trade at the factory are working for themselves in different cities. Carpet looms, where rag carpets are woven, are also operated by blind men. Rags for this purpose are frequently sewed at different institutions, and the Working Home for the Blind receives twenty-five and thirty-five cents a yard for furnishing chain and weaving the carpet. Chairs are also re-caned at prices ranging from sixty cents to three dollars and a half, according to the style.

Life at the Home is simple and comfortable. The men pay $2.25 per week for board, washing and mending. The sleeping rooms are large and airy, and a general bath room is provided, as the superintendent insists upon cleanliness. The food is plain, but wholesome, and several waitresses are on hand at meal time to cut the meat, butter the bread, and see that every man is properly cared for. All churches and nationalities are represented, but, regardless of creed, the men assemble in the little room known as the chapel each evening after supper, where a chapter from the Bible is read to them by Mr. Hunt. Some of the men have good voices, and often hymns are sung with the piano accompaniment of the blind boy who stems corn in the factory. The latter part of the evening is spent in conversation or in the library, where a number of raised letter books are to be found.

The labor of the institution is, of course, not as rapid in execution as the labor engaged in the industrial world, and, its product being comparatively small in quantity, does not yield sufficient for its proper support. It is not surprising, therefore, that the Blind Working Home does not pay.

and that the deficit must be made up by private donation and a State appropriation. But it is almost a sacrilege to view such work from a commercial standpoint, for the profit does not lie in the dollars and cents that go into the pockets of the workmen, or into the treasury of the institution, but finds its expression in the joy and comfort which are ministered to those poor unfortunates. To the donors it has its reward in the consciousness that the burden of affliction has been lifted, that speech has found a substitute for use by the dumb, and that light has been let into the souls of the physically blind.

LIBRARIES.

The Teachers' Library contains books of reference, poetry, biography, history, fiction, etc., which are used by the teachers in preparation for the work of their classes, and from which readings are given by the teachers to the pupils every evening. These books are printed in the common black type.

In the circulating library are 280 books in Moon type and 100 books in New York point print. Subscribers to the circulating library have access to the Pupils' Library, which contains over 1,000 books in line letter and 1,000 in New York point. These books are loaned to applicants, who can furnish proper recommendations, free of charge, and they are carried to and from the institution free of postage.

The total enrolment of subscribers to the circulating library is 127; the number of readers during the year ended September 30th was 49; new readers enrolled during the year 13; number of books issued 227. The number of books loaned since the library was established is 1,576.

The following books have been procured for the Teachers' Library: —

America, Travels in North, Hugh Murray, 2 vols.
Bible in India, Jacolliet.
Bubbles, by An Old Man.
Cæsar's Commentaries, translation and notes.
Charles and Marie, de Souza.
Comedies and Proverbs, Piotevin.
English Constitution, DeLolme.
English Prose, 4 vols.
Mrs. Falchion, Gilbert Parker.
Hebrew Commonwealth, John Jahn.
History, Lectures on Modern, Wm. Smyth, 2 vols.
Homer's Iliad, Pope's translation.
Inventions, History of, John Beckman, 2 vols.
Jeune Aveugle, Montolieu.
Lectures and Essays, Sir Stafford Northcote.
Mirror, the Edinburgh, 3 vols.
Moral Sentiments, and Origin of Languages, Adam Smith.
Poems, Lady Flora Hastings.
Poetical Quotations, Dictionary of, Sarah J. Hale.
Poets, British, Chaucer to Burns.
Political Cyclopædia, 4 vols.
Puritan Nomenclature, C. W. Bardsley.
School-room Rhymes, John Given.
Scripture Lands, Kitto.
Shakespeare, Age of, Seccombe and Allen, 2 vols.

Shakespeare, Readings from.
Shakespeare's Works, with notes, Carruthers and Chambers, 10 vols.
Woman's Work and Woman's Culture, Josephine E. Butler.
World, the, Adam Fitz-Adam, 4 vols.
Bible Encyclopædia, 3 vols.
Cooper's Novels.
George Eliot's Novels.
Miss Alcott's Works.
Life of Brant.
Great Englishmen.
Modern Banquet Orator.
Gospel Hymns.
Tackabury's Atlas.

The following in point print have been purchased for the Pupils' and Circulating Libraries:—

Robinson Crusoe, 2 vols.
King of the Golden River, Ruskin.
Captain January, Laura Richards.
The Day's Work, 2 vols., Kipling.
Twelfth Night, Rolfe's Notes.
Rebecca of Sunnybrook Farm, 2 vols.
The Virginian, 3 vols.
Selected Stories, Aldrich, 2 vols.
The Oregon Trail, 2 vols.
Handbook of Modern Japan, 2 vols.
That Preston Girl.

THE STAFF

Minister of Education (in charge):
HON. R. A. PYNE, M.D., LL.D.

Deputy Minister:
A. H. U. COLQUHOUN.

Officers of the Institution:

H. F. Gardiner, M.A.	Principal.
W. B. Wickens	Assistant Principal.
W. N. Hossie	Bursar.
J. A. Marquis, M.D	Physician.
B. C. Bell, M.D.	Oculist.
Miss A. M. Rice	Matron.

Teachers:

W. B. Wickens	Literary.
P. J. Roney	do.
Miss C. Gillin	do.
Miss M. E. Walsh	do.
Ernest A. Humphries	Music.
Miss E. Moore	do.
Miss E. Harrington	do.
Miss E. Lee	Kindergarten and Domestic Science.
Miss L. H. Haycock	Knitting and Crochet.
Miss E. Loveys	Sewing and Netting.
Miss K. Burke	Assistant Knitting and Sewing.
T. S. Usher	Piano Tuning.

George A. Ramsay.....Supervisor of Boys.
Miss M. J. Cronk.....Visitors' Attendant.
Mrs. J. Kirk.....Boys' Nurse.
Miss M. Stewart.....Girls' Nurse.
J. B. Wilson.....Engineer
G. G. Lambden.....Carpenter.
G. Grierson.....Baker.
D. Willits.....Farmer and Gardener.

FARM, GROUNDS AND BUILDINGS.

The outside woodwork of the western half of the main building was painted during the summer, and the barn and stables and workshop were also painted. New outside doors were provided for the workshop and western entrances to the main building. Hardwood floors were laid in the kitchen hall, boys' lavatory and one of the music rooms. Two of the doors were enlarged to facilitate the moving of the pianos. The usual amount of painting, oiling and kalsomining was done inside.

A new implement shed was erected, and the small tool house was removed. A covering of wood and tar paper was put around the cement silo to exclude frost. A handsome verandah was added to the Principal's residence. An ice-house is under construction. Owing to pressure of work in the Public Works Department it was not found possible to undertake the change in the heating system, for which an appropriation was made by the Legislature. A new lavatory was equipped in connection with the hospital, and several pipe drains were taken up and relaid. The flat roof of the bell tower was thoroughly repaired, and missing and broken slates were replaced where needed. Considerable work was done upon the eavetroughs and conductor pipes.

Outside, one of the most important improvements was the installation of seven electric arc lights for lighting the grounds, which were formerly not only dark but dangerous. The spruce trees bordering the centre walk and the grove near the Brant Avenue entrance have been trimmed, thus greatly improving their appearance and allowing light and air to circulate. The centre walk from St. Paul's Avenue to the farm crossing and a portion of the walk on the hill were rebuilt in cement, and cement steps were constructed at the west end door. Twenty-five elm trees were planted on St. Paul's Avenue, but there is little encouragement to continue work in that line, since the civic authorities permit the mutilation of beautiful trees to make room for trolley poles and feed wires. The boys' walk from the farm crossing to the top of the hill was taken up and laid with new scantling, the grade being improved.

The abundant rain in the fore part of the season ensured good crops of wheat, oats, corn, potatoes, and roots; the garden vegetables turned out well; the apples, though not of the best quality, are abundant.

VISITORS.

Many visitors from various parts of Canada, and not a few from the United States, are shown through the class rooms and any other portions of the buildings they care to see. From their expressions of opinion, they seem to be well satisfied with the work the Institution is doing, and will say a good word for the school when opportunity arises. They are made welcome from 9 a.m. to 4 p.m. on Mondays, Tuesdays Wednesdays, Thursdays and Fridays, but not on Saturdays or Sundays.

While the parents and other relatives of the pupils are at liberty to come at any time, it is proper to remind them that they cannot be lodged in the Institution.

H. F. Gardiner,
Principal.

Brantford, October, 1906.

PHYSICIAN'S REPORT.

Hon. R. A. Pyne, M.D., *Minister of Education for Ontario*:

Sir,—I have the honor to submit my annual report as Physician to the Ontario Institution for the Blind.

The past year has been an uneventful one, in that with very few exceptions the officials and pupils have been singularly free from serious illness. The pupils have not only kept free from disease, but have in many cases been greatly improved in general health and appearance. This fact speaks well for the diet and general regulation of the Institution, with its regular hours for retiring, meals, work, recreation, etc.

There has been a noticeable improvement in the physique of many of the boys particularly, during the past year. This is due to the work of Mr. George Ramsay, who has charge of the physical training classes. The interest taken in games has been quite remarkable and certainly must tend to better the physical and mental tones of those who become interested. Some such special supervision among the girls would, I think, be followed by good results.

During the early part of the past session we had a few cases of whooping cough.

During the summer there have been improved plumbing conveniences added to the Isolation ward, situated over the workshop. This makes it fairly complete, and contagious diseases can now be well handled without taking the patients from the grounds.

I have the honor to be,
Sir,
Your obedient servant,

J. A. Marquis.

Brantford, Sept. 1st, 1906.

OCULIST'S REPORT.

To Hon. R. A. Pyne, M.B., *Minister of Education*:

Sir,—I have the honor to submit my report as Oculist to the Ontario Institution for the Blind.

On March 29th and 30th I examined as follows:—

	Males	Females	Total
New pupils	13	9	22
Pupils re-admitted after an absence	3	4	7
Old pupils	12	12	24
Total examined			53

There was no question as to the eligibility of any of the pupils just entering, but one old pupil, from whom I removed a degenerated eye which had been a menace to its fellow, I reported, might safely continue his education at a public school, as there was no longer any danger to his good eye.

The usual number of pupils blind from infancy, but delaying attendance at the Institution until anywhere up to the age of twenty, are in evidence. It seems impossible to impress the parents of many of these children with the importance of beginning their proper education early in life. I must add, though, that the Principal deserves credit for the improvement he is bringing about in this respect.

A number of acute eye and ear troubles required my attention during the year, but in nearly all the cases the pupils recovered their former condition. There was an agreeable absence of contagious eye troubles, not one having been brought to my notice.

Respectfully submitted,

B. C. Bell.

Brantford, Sept. 4th, 1906.

LITERARY EXAMINER'S REPORT.

Hon. R. A. Pyne, M.D., *Minister of Education*:

Sir,—In submitting the report of my examination of the literary department in the Ontario Institution for the Education of the Blind, there is very little of a general nature to state.

In the Kindergarten work the classes are large enough to engage the attention of more than one teacher. Miss Lee does exceedingly good work, and in an ordinary school she would find the class small enough, but in this Institution the conditions are so different that an assistant would be most valuable. We find here children very young and in the same class an occasional pupil fifteen or sixteen years of age. This may be accounted for in part by the fact that parents from natural affection towards a child, especially one with some defect, are reluctant to let such a one leave home until they realize that something must be done for their offspring. Thus a child of fifteen or sixteen must begin with one of seven or eight. If parents knew the nature of the training at this Institution, they might be induced to part with their children earlier in life.

Again, we find boys or girls of foreign extraction. Sometimes these are very quick to learn, but they require special attention. In this class, among those of French origin there is one boy who last October knew no English, but, for all that, passed a very creditable examination in English Reading, so good an examination in fact that he was allowed full marks.

One little fellow was present with his left hand and left side partially paralyzed. It was impossible for him to trace the letters in reading, without a guiding hand.

From such instances one may gather that progress must be slow, and that the services of an assistant Kindergarten teacher would prove very valuable.

The change in spelling book, recommended in my last report, has been adopted, and an authorized Canadian edition is now used.

The recommendation in my last report, in reference to Latin, also has been acted on, and though the ground covered is not extensive, yet a very promising beginning has been made.

A detailed statement of the work of the various classes during the four days' examination, held from June 12th to 15th, inclusive, will be found in the following:—

Mr. Wickens' Classes.

Arithmetic.—Simple questions in fractions. This class consists of seven boys and nine girls with great variety of ability. Three of the pupils obtained perfect marks, the percentage of the class ranging from 0 to 100 with an average of 63.

Geography.—British Empire. In this class of eight boys and fifteen girls the answers generally were good and showed careful study, though some were poor, the marks ranging from 17 to 100 per cent., and averaging 76.

Reading.—This is the senior class and consists of six boys and ten girls. The book of selections is in point print. The marks assigned were from 50 per cent. to 85, with an average of 67. The pupils were examined in a piece of several lines, and afterward, to show that they had not memorized the work, detached lines were selected for them to read, and they stood the test very creditably.

Latin.—First conjugation; first and second declensions, nouns and adjectives. Though the ground covered is not very extensive, the work has been done thoroughly and the results are highly satisfactory. The class of six boys and twelve girls answered with great readiness and accuracy, all but two obtaining full marks.

Bible Geography and History.—The period covered is from the end of the Old Testament to the beginning of the New Testament. This class consists entirely of boys, twenty in number. High marks were obtained, from 50 per cent. to 100, the average being 84.

Spelling.—There are four divisions in this class, composed entirely of boys, consisting respectively of nine, eight, five and four pupils. The marks assigned to these four divisions were respectively 78, 83, 77 and 81 per cent., being an average of about 80.

Mr. Roney's Classes.

Arithmetic.—Subtraction, multiplication to 12 times 20; easy problems. In this class there are three divisions containing seventeen pupils (nine boys and eight girls) with great variety of ability, the marks varying from 25 per cent. to 100, with an average of 76. This junior class has much good material.

English Grammar.—Parts of speech and the analysis of simple sentences. There are twelve boys and nine girls in the class, and with the exception of two the pupils have a grasp of the work. Some of the class are exceedingly bright. The marks assigned were from 0 to 100 per cent., averaging 74.

Geography.—Canada, particularly Ontario. Map and book work of the Public School Geography. This is a junior class of nine boys and four girls. The answers indicated excellent work, two pupils obtaining full marks. The pupils were graded in marking from 67 per cent. to 100, with an average of 85.

Reading.—Embossed Readers, I., II., III. This class of eight boys and eight girls has several good readers, as is indicated by the marks from 40 to 95 per cent., with an average of 75.

Writing.—This is a senior class of eleven boys and twelve girls, and the results are very creditable. The importance of writing cannot be too strongly emphasized. The pupils obtained in marking from 35 to 95 per cent., making an average of 75 per cent.

Miss Walsh's Classes.

Arithmetic.—Fractions, measurements of rooms, carpeting, general problems. This is a senior class of six boys and ten girls, and some of the pupils are very quick in calculation. Several took full marks, the range being from 10 per cent. to 100, giving an average of 73 per cent.

English Grammar.—The work for this intermediate class consists of definitions, the indicative mood and the parsing of simple sentences, and the ground has been well covered. The marks were from 35 per cent. to 100, with an average of 78 in a class of five boys and ten girls.

Geography.—This junior class of fifteen boys and eleven girls have had for their work definitions, Ontario, physical features, railways, products, New Ontario, provinces with capitals, etc. The pupils are greatly assisted by the use of the dissected map, which tends to make the study of geography more practical. It certainly adds interest to this very important subject. The marks varied from 38 to 100 per cent., the average being 78 per cent.

Reading.—There are two divisions in this class, the senior, consisting of two boys and four girls in the Third Reader; the junior, one boy and three girls in the Second Reader. As the class is small more individual attention is given to the pupils—a distinct advantage, as is shown by the high marks received from 60 to 100 per cent. with an average of 90.

Writing.—In this class of six boys and ten girls the work consists in writing single words, with the use of small letters, though some try capitals. The marks varied from 20 per cent. to 80, with an average of 45 per cent.

Object Lessons.—A very interesting half-hour was spent with this class of young pupils, seventeen boys and twenty-two girls. The attention in this large class was exceedingly good and they manifested much ability in describing the manufacture of carpets, pianos and other articles. By the use of stuffed birds and four-footed animals they were able to give a description of the Eider Duck, Horned Owl, Wild Turkey, Ferret and others. The answers on the whole were very creditable, especially considering the size of the class.

Bible History.—First six chapters of St. John; parables and miracles from Matthew, Luke and Acts. This class is composed of four boys and twelve girls, all Roman Catholics. The marks ranged from 50 per cent. to 100, with an average of 87 per cent.

Spelling.—This class of nine Roman Catholic girls showed excellent results in the work of spelling, as found in twenty pages of Gage's Speller all but one obtaining full marks. Here again the small number in the class admits of more personal teaching.

Miss Gillin's Classes.

Arithmetic.—Multiplication tables to twenty times twenty; weights and measures; simple rules and problems. In a class of eight boys and eight girls the marks ranged from 27 per cent. to 98, with an average of 66 per cent.

English Grammar.—This is a senior class of three boys and eight girls, most of whom showed good preparation in work which comprised the history of the language, a review of definitions, with false syntax, parsing and analysis. The marks assigned were from 40 per cent. to 96, averaging 75 per cent.

Geography.—The work in this subject has been thoroughly done, embracing the United States and South America in detail, and outlines of Mexico, Central America and the West Indies. In a class of three boys and nine girls, four obtained full marks, the rest from 67 per cent. to 92, the average of the class being 86 per cent.

Writing.—The work consists of letters and simple words with pencil and grooved card. There are eight boys and ten girls in this class of juniors. The marks varied from 5 per cent. to 80, with an average of 37 per cent.

English History.—Twenty-four chapters of Justin McCarthy's "History of Our Own Time." This class of ten boys and twelve girls showed marked proficiency and careful training as indicated by the very high average in marks of 93 per cent.

Canadian History.—From the Treaty of Paris, 1763, to the end of the War of 1812-14. The pupils in this class are the same as in English History and have done highly creditable work, receiving marks from 34 per cent. to 100, with an average of 87 per cent.

Bible Geography and History.—The class of eighteen girls passed a very creditable examination of the portion studied, embracing four hundred years between the Old Testament and the New Testament. All did well, the marks averaging 97 per cent.

Spelling.—Gage's Practical Speller, Part I., thirty-three sections; Part V., eight sections. This class of twenty girls acquitted themselves well, taking from 50 per cent. to 100, with an average of 87 per cent.

English Literature.—The pupils in this subject are excellent students and eminently successful. They have evidently done their work thoroughly, difficult though it has been, including the history of American literature from 1620 to 1861; names and locations of Canadian Universities, as well as Shakespeare's play "Hamlet." The pupils without exception (eight boys and eighteen girls) showed an appreciation of the various characters portrayed in this tragedy and passed a highly creditable examination, the average marks being 94 per cent.

Some type-written samples of English composition were submitted for examination, both the compositions and the type-writing being the work of the pupils. Both the subject matter and the mechanical work were excellent.

Miss Lee's Classes.

In the Kindergarten class we found an interesting family of thirteen boys and six girls engaged in picture sewing, mat weaving, paper folding, cutting and pasting, bead stringing, leather lacing, raffia, gift lessons with blocks, making models in clay, etc.

The children are taught to memorize poetry, some of which they recited very well indeed, showing careful training.

The class room is furnished with a piano which is used to accompany the scholars in their musical exercises. Under the guidance of Miss Lee at the piano, the children sang several selections with the sweet effect that only children can produce.

The pupils were examined in the following literary subjects:—

Arithmetic.—Counting by odd and even numbers, addition from one to thirteen, subtraction, multiplication to five times, examples. In this class there are three divisions. The marks assigned were from 50 per cent. to 100, with an average of 87 per cent.

Reading.—There are several divisions in this class of fourteen boys and six girls, some of them remarkably bright. For example, a boy of French origin knew no English last October, but is now one of the best readers in the room. Some require assistance in guiding their hands while tracing the letters, but the majority have overcome that difficulty. The marks assigned varied from 40 per cent. to 100, the average being 76 per cent.

Bible Geography and History.—This class of eleven boys and five girls answered exceedingly well the questions on their work that included the names of the books in the Bible classified, the Apostle's Creed, Lord's Prayer, Ten Commandments, the Beatitudes, Psalms, I., XIX., XXIII., CXVII. The average mark was 98 per cent.

Spelling.—Steps in the Phonic System, words of three letters, mixed words, names of familiar objects. Thirteen boys and six girls compose this interesting class. Average, 98 per cent.

Miss Haycock's Classes.

Bible Geography and History.—This is a bright class of fifteen girls. The answers were excellent, on work including Exodus, Leviticus and Numbers in outline. The marks ranged from 50 per cent. to 100, with an average of 93 per cent.

Spelling.—The work in this class consists of the first twenty-three pages of Gage's Speller, and words pronounced alike with different meanings. In this room there are seventeen girls, most of whom did very well, the marks ranging from 34 per cent. to 100, with an average of 80 per cent.

Miscellaneous.

In addition to these subjects which belong to the literary department proper, there are other branches that occupy the attention of many of the pupils, and, as I was requested to inspect the work, a brief report is here appended.

Under the direction of Miss Haycock, assisted by Miss Burke, forty-one girls receive instruction in knitting and crochet work, and great credit is due to both the instructress and the instructed for the fine samples of their skill.

In Domestic Science, Miss Lee has a class of six girls whom she instructs in the care of the kitchen, setting the table, cooking, dish-washing, dusting, and other branches of ordinary housekeeping.

In the sewing room a class of twenty receive useful lessons in sewing and some in netting from Miss Loveys, assisted by Miss Burke.

In head-work, Miss Cronk teaches a class of twenty-two boys, with excellent results, and Miss Hepburn (a pupil teacher) takes charge of twenty-nine girls very successfully.

The work in physical culture is under the direction of Mr. Roney and Mr. Ramsay, the former having a class of fifty-three girls, arranged in three divisions. A class of fifteen girls gave an exhibition in club-swinging, bar bells and marching, showing careful training. The boys, to the number of twenty, showed to advantage in dumb bell exercises and marching, the evolutions being marked by vigor and precision. Both Mr. Roney and Mr. Ramsay have produced good results in their classes.

A most important branch remains to be mentioned, where a class of 21 boys may be found busily occupied in the workshop. Here instruction is given by a person who for a generation or more has proved most faithful in the discharge of the duties devolving on him—that is Mr. George Lambden. The rooms are kept remarkably clean and in excellent order. Some of the boys are taught the uses of willow and cane for chairs and other articles, while others are engaged in making hammocks and similar goods, for which there is a fairly remunerative market. Although the pupils enter heartily into the work and apparently enjoy it, yet, if a small percentage were allowed them of the proceeds from the sale of goods made by them, it would be an incentive to greater activity. This suggestion may be worthy of consideration on the part of the Minister of Education.

In conclusion, I would acknowledge the courtesy shown me by Principal Gardiner, the faculty and other officers of the institution, which served to make enjoyable the otherwise somewhat arduous duties of examiner.

I have the honor to be,

Sir,

Your obedient servant,

S. F. Passmore.

REPORT ON MUSICAL INSTRUCTION.

Hon. R. A. Pyne, M.D., *Minister of Education*:

Sir,—I beg to submit the result of my examination of the Musical Instruction given at the Ontario Institution for the Blind, Brantford.

The examination was held on the 30th and 31st of May, 1906, and conducted under the following heads:—Piano, Organ, Theory of Music (Harmony, Counterpoint and Musical History), Singing and Vocal Class. Some work of the members of the graduating class in piano tuning was also heard. Sixty pupils have been studying music during the last year, of whom fifty-nine took up the piano, nine the organ, two singing and nineteen musical theory. With the exception of two, each one was heard by me separately. As in former years, several of the students availed themselves of the local examinations of the Toronto College of Music. Thirteen presented themselves this year and passed the examinations; the results are incorporated in this report.

The Piano course of the O. I. B. has pupils in every stage of development, from beginners to graduates. One finds, of course, among so many, talents in varying degrees, but it is pleasant to note that, while the more

gifted pupils are being well taught, the others, with less talent, are by no means neglected—all being carefully grounded in the essentials of touch, technique and musical expression.

The grades are from I. to IV., each with subdivisions A, B, and C. In Grade I. there are 28 pupils—16 in Class A, 6 in Class B, and 6 in Class C. Of the sixteen pupils in Class A (the lowest) two may be singled out from the others as being very promising, five as being somewhat less so, and eight who only do fairly well. One was not heard. Of these latter, four are adults who are taking a little piano work in connection with tuning. In Class B there are six pupils; three are fairly bright and are doing well; the others are slower. Of the six pupils in Class C, two are capable, two are fair, one is very slow; the last was not heard.

In grade II. there are nine pupils—four in Class A, three in Class B, and two in Class C. Of the four pupils in Class A, two are doing very well and the other two fairly well. Of the pupils in Class B, one is good and two are fair. Both of the pupils in Class C are doing well; one of them passed with first-class honors the first examination of the Toronto College of Music and the other gives much promise.

In the third grade are twelve pupils; seven in Class A, three in Class B, and two in Class C. Three of the pupils in Class A passed the first examination of the Toronto College of Music with first-class honors, and one of these three must be noted as being exceptionally promising; another passed the same examination with honors, and another obtained pass standing; the other two pupils in Class A do fair work. Of the three pupils in Class B, one passed with honors the Toronto College of Music first examination; the other two are doing fairly well. One of the two pupils in Class C passed the Toronto College of Music second examination; the other does fair work.

In grade IV. are nine pupils; two in Class A, five in Class B, and two in Class C. The two pupils in Class A passed the second examination of the Toronto College of Music, one with honors. Of the five pupils in Class B, one has passed with first-class honors the Toronto College of Music third examination; three play fairly well; the other has a weak technique. Of the two pupils in Class C, one of them, Miss Mary Macdonald, was this year awarded the Piano Diploma of the College of Music; the playing of the other is fair.

The single pupil in grade V. (the highest), Miss Hester Ponting, has, with Miss Macdonald, obtained the Piano Diploma of the Toronto College of Music. Without being exceptionally brilliant, these young ladies are good players, and during the last few years have been conscientious students. Their reward is well merited.

The pupils in the Organ class are divided into grades II., III. and IV. In grade II. are two pupils, neither of whom could appear. In grade III. there are six pupils. Of these, three are playing quite well, one particularly so; the other three are fair. The one pupil in grade IV. played some French music in a brilliant manner.

The pupils in Musical Theory (under Miss Moore) are divided into three classes, A, B, and C. Of the ten pupils in Classes A and B, nine of them passed the First or Second Theory examinations of the Toronto College of Music. The four pupils in Class A, who are doing advanced work, all passed the second examination of the College, working papers in written and practical harmony, counterpoint and musical history. Three of these pupils did remarkably good work in counterpoint and history, obtaining 80

per cent. and more of the marks, and standing near the head of the list among this year's successful candidates of the Toronto College of Music. Of the six pupils in Class B, five passed the first theory examination of the Toronto College of Music, three of them scoring high percentages. The junior pupils of Class C worked papers set for them in harmony and history. The average mark obtained in Harmony was 64 per cent., and in History 36 per cent. The lower average in this class, when set against the more satisfactory showings of the diploma candidates, would seem to indicate the stimulus exerted by examinations.

Two pupils were examined in singing this year. Neither could give evidence of any training, although each is the possessor of a fair voice. It would be to the advantage of the O.I.B. if more attention were given to solo singing.

The choral class again demonstrated how much enjoyment the students derive from part-singing. Four part songs by modern composers were nicely sung, showing that much pains had been bestowed by Mr. Humphries in keeping up the standard of this part of the Institution's work.

At the morning devotional exercises, the hymns were heartily sung to the accompaniment of the organ, which was capably played by one of the organ pupils.

Mr. Usher, the Instructor in Piano Tuning, is maintaining the good work of his predecessors. Nineteen of the students are at various stages in the tuning course. The work of two or three of the most advanced was seen and found to be excellent.

The teaching of Mr. E. A. Humphries, the Musical Director, and of his assistants, Miss Moore and Miss Harrington, as seen in the performances of their pupils, reflects much credit upon them. The standard is well maintained, and seems likely to be continued; and there is a spirit of hearty emulation among the students which one is pleased to see.

I have the honor to be,

Sir,
Your obedient servant,

W. E. Fairclough.

Toronto, August 29th, 1906.

ONTARIO INSTITUTION FOR THE BLIND.

STATISTICS FOR THE YEAR ENDING 30TH SEPTEMBER, 1906.

I. Attendance.

	Male.	Female.	Total.
Attendance for portion of year ending 30th September, 1872.	20	14	34
" for year ending 30th September, 1873	44	24	68
" " " 1874	66	46	112
" " " 1875	89	50	139
" " " 1876	84	64	148
" " " 1877	76	72	148
" " " 1878	91	84	175
" " " 1879	100	100	200
" " " 1880	105	93	198
" " " 1881	103	98	201
" " " 1882	94	73	167
" " " 1883	88	72	160
" " " 1884	71	69	140
" " " 1885	86	74	160
" " " 1886	93	71	164
" " " 1887	93	62	155
" " " 1888	94	62	156
" " " 1889	99	58	167
" " " 1890	95	69	164
" " " 1891	91	67	158
" " " 1892	85	70	155
" " " 1893	90	64	154
" " " 1894	84	66	160
" " " 1895	82	68	150
" " " 1896	72	69	141
" " " 1897	76	73	149
" " " 1898	74	73	147
" " " 1899	77	71	148
" " " 1900	77	67	144
" " " 1901	72	66	138
" " " 1902	68	70	138
" " " 1903	67	64	131
" " " 1904	68	66	134
" " " 1905	67	74	141
" " " 1906	71	76	147

II. Age of Pupils.

	No.		No.
Five years	1	Seventeen years	4
Six "	2	Eighteen "	8
Seven "	4	Nineteen "	8
Eight "	3	Twenty "	6
Nine "	8	Twenty-one "	6
Ten "	9	Twenty-two "	3
Eleven "	10	Twenty-three "	5
Twelve "	7	Twenty-four "	3
Thirteen "	11	Twenty-five "	2
Fourteen "	10	Over twenty-five years	14
Fifteen "	14		
Sixteen "	9	Total	147

III. Nationality of Parents.

	No.		No.
American	2	German	5
Canadian	74	Hungarian	1
English	29	Russian	1
Irish	16	Scotch	16
Italian	1	Unknown	1
Galician	1		
		Total	147

IV. Denomination of Parents.

	No.		No.
Congregational	2	Roman Catholic	26
Baptist	6	Salvationist	3
Disciples	1	Lutheran	2
Episcopalian	42	Jewish	2
Methodist	35	Greek Catholic	1
Evangelical Association	1		
Presbyterian	27	Total	147

V. Occupation of Parents.

	No.		No.
Agents	2	Laborers	32
Barber	1	Lawyer	1
Bartender	1	Machinists	2
Bricklayers	2	Manufacturer	1
Blacksmith	1	Merchants	5
Butcher	0	Millwright	1
Captain	1	Miner	1
Carpenters	5	Painter	2
Carter	1	Polisher	1
Clerk	1	Plumber	1
Civil Engineer	1	Policeman	1
Contractors	2	Plasterers	2
Cooper	1	Printer	1
Cook	1	Railway Employes	3
Carriage-builder	1	Repairer	1
Cabinetmaker	1	Shoemakers	2
Conductor	0	Tanner	1
Drover	1	Tailors	4
Electrician	1	Teacher	1
Farmers	40	Teamsters	3
Firemen	2	Telegraph Operator	1
Foreman	1	Traveller	1
Gardeners	2	Warehouseman	1
Government officers	1	Weaver	1
Gentleman	1	Unknown	3
Grocer	1		
Hostler	1	Total	147
Hotel-keeper	1		

VI.—Cities and counties from which pupils were received during the official year ending 30th September, 1906.

County or city.	Male.	Female.	Total.	County or city.	Male.	Female.	Total.
District of Algoma	3	1	4	County of Norfolk	....	4	4
City of Belleville	....	....	....	" Northumberland	2	1	3
County of Brant	1	....	1	" Ontario	1	....	1
City of Brantford	2	2	4	City of Ottawa	2	2	4
County of Bruce	1	2	3	County of Oxford	1	2	3
" Carleton	....	....	....	District of Parry Sound	1	....	1
" Dufferin	....	....	....	County of Peel	1	....	1
" Dundas	....	....	....	" Perth	1	1	2
" Durham	....	....	....	" Peterborough	1	3	4
" Elgin	2	....	2	" Prince Edward	1	....	1
" Essex	....	3	3	" Prescott	2	....	2
" Frontenac	....	....	....	" Renfrew	....	....	....
" Glengarry	1	1	2	" Russell	....	2	2
" Grenville	....	1	1	District of Rainy River	....	1	1
" Grey	....	1	1	City of St. Catharines	....	....	....
City of Guelph	1	1	2	" St. Thomas	....	....	....
County of Haldimand	....	....	....	" Stratford	1	2	3
" Haliburton	....	....	....	County of Simcoe	2	1	3
" Halton	....	....	....	" Stormont	....	....	....
City of Hamilton	1	3	4	City of Toronto	13	15	28
County of Hastings	....	....	....	County of Victoria	2	....	2
" Huron	2	1	3	" Waterloo	4	1	5
City of Kingston	1	....	1	" Welland	....	1	1
County of Kent	2	2	4	" Wellington	....	1	1
" Lambton	5	2	7	" Wentworth	1	3	4
" Leeds	2	....	2	City of Windsor	1	2	3
" Lanark	....	1	1	" Woodstock	2	....	2
" Lennox	....	....	....	County of York	1	1	2
" Lincoln	....	....	....	*Province of Alberta	....	1	1
City of London	....	....	....	*British Columbia	1	....	1
County of Middlesex	....	4	4	*Manitoba	2	1	3
District of Muskoka	....	....	....	*Saskatchewan	2	3	5
District of Nipissing	2	3	5	Total	71	76	147

*On Payments.

VII.—Cities and counties from which pupils were received from the opening of the Institution till 30th September, 1906.

County or city.	Male.	Female.	Total.	County or city.	Male.	Female.	Total.
District of Algoma	5	4	9	City of Guelph	4	3	7
City of Belleville	3	1	4	County of Norfolk	10	9	19
County of Brant	8	7	15	" Northumberland	5	9	14
City of Brantford	16	10	26	" Ontario	7	9	16
County of Bruce	9	11	20	City of Ottawa	17	2	19
" Carleton	2	1	3	County of Oxford	7	11	18
" Dufferin	2	1	3	District of Parry Sound	1	....	1
" Dundas	3	3	6	County of Peel	2	1	3
" Durham	4	4	8	" Perth	5	10	15
" Elgin	7	6	13	" Peterborough	13	5	18
" Essex	11	20	31	" Prince Edward	6	2	8
" Frontenac	5	2	7	" Prescott	4	....	4
" Glengarry	8	1	9	" Renfrew	8	6	14
" Grenville	2	2	4	" Russell	3	3	6
" Grey	9	12	21	City of St. Catharines	2	1	3

VII.—Cities and counties from which pupils were received from the opening of the Institution till 30th September, 1906.—*Continued.*

County or city.	Male.	Female.	Total.	County or city.	Male.	Female.	Total.
City of St. Thomas	3	2	5	District of Muskoka	3	....	3
" Stratford	3	1	4	County of Stormont	5	....	5
County of Simcoe	11	11	22	City of Toronto	62	42	104
" Haldimand	4	5	9	County of Victoria	8	2	10
" Halton	6	3	9	" Waterloo	12	5	17
City of Hamilton	14	19	33	" Welland	6	4	10
County of Hastings	5	5	10	" Wellington	10	8	18
" Huron	12	10	22	" Wentworth	9	10	19
City of Kingston	7	4	11	" York	18	16	34
County of Kent	10	6	16	*Province of Quebec	4	1	5
" Lambton	18	6	24	*North-West Territory	1	4	5
" Leeds	14	4	18	*United States	1	....	1
" Lanark	2	4	6	*British Columbia	1	....	1
" Lennox	4	1	5	*Manitoba	1	....	1
" Lincoln	3	3	6	*Alberta	....	1	1
City of London	10	9	19				
District of Nipissing	6	4	10	Total	476	361	837
County of Middlesex	9	12	21				

* On payment.

VIII.—Cities and counties from which pupils were received who were in residence on 30th September, 1906.

County or city.	Male.	Female.	Total.	County or city.	Male.	Female.	Total.
District of Algoma	2	1	3	County of Norfolk	....	3	3
City of Belleville	....	....	....	" Northumberland	1	1	2
County of Brant	....	....	....	" Ontario	1	....	1
City of Brantford	2	1	3	City of Ottawa	1	2	3
County of Bruce	1	2	3	County of Oxford	....	1	1
" Carleton	....	....	....	District of Parry Sound	1	....	1
" Dufferin	....	....	....	County of Peel	1	....	1
" Dundas	....	....	....	" Perth	1	1	2
" Durham	....	....	....	" Peterborough	....	3	3
" Elgin	1	....	1	" Prince Edward	....	....	....
" Essex	....	2	2	" Prescott	2	....	2
" Frontenac	....	....	....	" Renfrew	....	....	....
" Glengarry	1	1	2	" Russell	....	2	2
" Grenville	....	1	1	District of Rainy River	....	1	1
" Grey	....	1	1	City of St. Catharines	....	....	....
City of Guelph	1	1	2	" St. Thomas	....	....	....
County of Haldimand	....	....	....	" Stratford	1	2	3
" Haliburton	....	....	....	County of Simcoe	2	1	3
" Halton	....	....	....	" Stormont	....	....	....
City of Hamilton	1	1	2	City of Toronto	11	9	20
County of Hastings	....	....	....	County of Victoria	2	....	2
" Huron	2	1	3	" Waterloo	3	1	4
City of Kingston	1	....	1	" Welland	....	1	1
County of Kent	1	1	2	" Wellington	....	....	....
" Lambton	4	1	5	" Wentworth	1	1	2
" Leeds	2	....	2	City of Woodstock	....	2	2
" Lanark	....	1	1	County of York	1	1	2
" Lennox	....	....	....	Province of Alberta	....	1	1
" Lincoln	....	....	....	British Columbia	1	....	1
City of London	....	....	....	Manitoba	2	1	3
County of Middlesex	....	2	2	Saskatchewan	2	3	5
District of Muskoka	....	....	....				
" Nipissing	2	3	5	Total	55	55	110

Ontario Institution for the Education of the Blind, Brantford, Ont., Canada. Maintenance Expenditures for the year ending 30th September, 1906; compared with preceding year.

Item.	Service.	30th September, 1905 Average Attendance, 109. Total Expenditure, 1905.	Yearly cost of average 109.	Weekly cost of average.	30th September, 1906. Average Attendance, 110. Total Expenditure, 1906.	Yearly cost of average 110.	Weekly cost of average.
		$ c.	$ c.	c.	$ c.	$ c.	c.
1	Medicines, Medical Comforts	54 09	49	.9	64 58	58	1.1
2	Butcher's Meat, Fish and Fowls..	1,424 26	13 06	25.1	1,594 89	14 49	27.7
3	Flour, Bread and Biscuits	524 78	4 81	9.2	413 60	3 76	7.2
4	Butter and Lard	978 25	8 97	17.2	1,144 41	10 40	20.
5	General Groceries	1,447 99	13 28	25.5	1,067 98	9 70	18.6
6	Fruit and Vegetables.....	120 79	1 11	2.1	224 67	2 04	3.9
7	Bedding, Clothing and Shoes	416 61	3 82	7.3	437 60	3 97	7.6
8	Fuel—Wood, Coal and Gas	3,626 09	33 26	63.9	3,176 73	28 88	55.5
9	Light—Electric and Gas.....	752 48	6 90	13.2	745 74	6 78	13.
10	Laundry Soap and Cleaning.....	283 37	2 60	5.	231 84	2 10	4.
11	Furniture and Furnishings	642 06	5 89	11.3	529 29	4 81	9.2
12	Farm and Garden — Feed and Fodder.....	636 49	5 83	11.2	781 73	7 10	13.6
13	Repairs and Alterations	852 01	7 88	15.1	821 48	7 46	14.3
14	Advertising, Printing, Stationery, &c.	754 43	6 91	13.3	427 09	3 88	7.4
15	Books, Apparatus and Appliances	644 30	5 91	11.3	865 14	7 86	15.1
16	Miscellaneous, unenumerated ...	804 75	7 37	14.1	1,170 64	10 64	20.4
17	Pupils' Sittings at Church	100 00	91	1.7	200 00	1 81	3.4
18	Rent of Hydrants	160 00	1 46	2.1	160 00	1 45	2.8
19	Water Supply	309 45	2 83	5.5	277 75	2 52	4.8
20	Salaries and Wages.....	17,674 72	162 15	311.8	18,018 58	163 80	315.
21	Repairs to Buildings, Furniture, &c.				376 73	3 42	6.5
		32,155 92	295 01	567.3	32,700 47	297 27	571.6

30th September, 1906. Certified correct, W. N. HOSSIE, Bursar.

Robert Mathison, M. A.,
Superintendent and Principal,
Ontario Institution for the Deaf and Dumb,
September 13th, 1879, to September 30th, 1906.

APPENDIX K.—*REPORT OF THE SUPERINTENDENT AND PRINCIPAL OF THE ONTARIO INSTITUTION FOR THE DEAF AND DUMB.*

BELLEVILLE, 30TH SEPTEMBER, 1906.

HON. R. A. PYNE, M.D., *Minister of Education*, TORONTO, ONT.:

SIR,—I have the honor to present the Thirty-sixth Annual Report of this Institution, for the year ending 30th of September, 1906.

We have a larger attendance than we had last year and a greater number of new pupils are enrolled—the publicity effort made a year or so ago seems to be bearing fruit now. A greater interest is being manifested in the Institution judging by the numerous letters of inquiry received from all parts of the Province.

The thirty-sixth session began on September 19th with the usual simple ceremonies and under conditions that gave promise of a pleasant and successful term. On that day the pupils were gathered in from all parts of the Province, three coming from the "Soo," and all arrived safe and well, with no untoward incident to mar the journey. It was a very bright and happy lot of boys and girls that next morning assembled in chapel for the preliminary opening exercises. As Superintendent, I gave a few words of welcome to all present and was glad so many of the parents and friends had come with the pupils to see the Institution and the staff, and to judge for themselves as to whether or not their children are likely to be well cared for. It was, of course, hard for parents to part from their boys and girls and to place them for so long in the hands of others, yet this was one of the many sacrifices they must make for the good of their children, and they could rest assured that they would have the best of care and attention. It was a matter of pleasure to know that all the old pupils have the most kindly recollections of the Institution, and there was no doubt that most of them have here the best times of their lives. We all tried to make them so happy that when they grew up they would retain the most pleasant recollections of their school life and affection and regard for the officers and teachers. Parents could rest assured that their children would be looked after in the best possible way. They had regular hours for sleeping and eating, a reasonable amount of time for play and recreation, and plain, but good, food, and all they wanted of it. The best quality of meat, butter, bread and other victuals was provided for them, no distinction in this respect being made between the pupils and the officers and teachers. Those parents who are parting with their children for the first time would feel especially anxious about them, but they could notice how much at home all the old pupils felt and how happy and contented they were, and the new pupils would soon come to feel the same: in fact nearly all of them seemed quite at home already. All pupils are required to write home every three weeks during the session, and could write as much oftener as they desired. If parents wished to hear from their children more frequently all they had to do was to write to me

MARTIN'S STATUE OF DE L'EPEE AT THE PARIS INSTITUTION.

A statue to the memory of De l'Epee was erected in the garden of the Paris Institution, May 24th, 1879. It was executed and presented by a deaf-mute sculptor of the name of Martin. It represents the Abbe teaching a deaf-mute the Divine name which is inscribed with its dactylologic representation on a tablet which he holds in his hand.

and they would get a reply by return mail. If a child got sick, the parents would be notified at once, and would get word every day as long as it was ill. If its condition became dangerous, they would be at once summoned by telegraph to come to the Institution. Nothing was ever concealed from the parents, but the exact condition of the child was stated. We have a skilled physician and a trained nurse always in attendance, and nothing was left undone for the sick that skill and care could accomplish. Some of the old pupils who had been expected to return had not done so, which was regretted, and, no doubt, they would feel that way before many years. However, all were wished every success in life. The staff was the same as last year with one exception. During the vacation Mr. Forrester resigned and went to the Montana school; he had been a valued teacher here. His place will be taken by Mr. Rodwell, of the Devonshire, England, School for the

Deaf, and we are sure we will find him a good teacher and a genial companion. Miss Anetta Johnston has been appointed girls' monitor, her special duty being to look after the small girls outside of the class-rooms. She will also have charge of Mr. Rodwell's class till he arrives. Dr. Spankie's report of his official examination in June was gratifying and indicated a very satisfactory year's work, and a hope was expressed that they would all do even better this term and make it a record session. They were reminded again of the motto of the Institution, "The greatest happiness is found in making others happy," and if they all practised this motto every day he had no doubt that this session would be a very pleasant and successful one in all respects. Everything would be done to promote the physical, mental and moral welfare of the children and to fit them to act well their part in life. Several of the teachers then made short addresses of welcome, after which the classification of pupils was made, and the work began promptly in every class-room.

Historical Sketch of the Origin and Progress of Deaf-Mute Education.

During the past year we were favored with a visit from Dr. James Kerr Love, the distinguished Aural Surgeon of the Glasgow, Scotland, Royal Infirmary, who has made deaf-mutism a clinical and pathological study for many years. Dr. Love is an acknowledged authority in the old world on deaf-mutism in general, the ear and hearing, congenital deafness, acquired deafness, the diagnosis, prognosis and treatment of deaf-mutism. Dr. Love visited the prominent institutions in the Eastern States and Canada, making further researches in the matters enumerated above. Mr. Carnegie, the millionaire, set apart ten millions of dollars, the chief purpose of which was to give a free university education to deserving young students in the universities of Scotland. Part of this money was alloted for original research in medicine, science, history, etc. Part of the grant was offered to Dr. Love to enable him to make researches in connection with deaf-mutism, and with that end in view he has visited schools for the deaf in Great Britain, Germany, Austria and other countries. Dr. Love's visit to our Institution was one of great profit and pleasure. On the morning of his departure he made a short but interesting address to the officers, teachers and pupils in the chapel. He told them about his visits to the various schools for the deaf in Germany, Austria, Denmark and America, as well as in Great Britain, and he said that wherever he went he found that the deaf were being well cared for and liberal provision made for their education, the same as is done in Ontario. He could assure them, however, that at no other school that he had visited in any country had he seen better arrangements made for promoting the happiness of the deaf, for ensuring their success and welfare in life, and for developing in them the best ideals and highest personal character. From Dr. Love's writings, and other sources, is here presented many historical facts concerning the origin and progress of deaf-mute education.

"To instruct the deaf no art could ever reach,
No care improve them, and no wisdom teach."

The above couplet of the Roman poet Lucretius well represents the attitude of antiquity toward the deaf and dumb, and inspired as the ancients were by such sentiments, it is not to be wondered at that we read little of

any attempts to ameliorate their lot. Mention is made by Pliny of one Quintus Pedius, who was taught to paint, but this seems to be the only case during the classical age of even the slightest attempt at the education of the deaf. They were treated, not as "deaf," but as "dumb," and this dumbness was considered by the credulous people of that age, as it is in this, to be owing to some defect of the brain, some incapacity of the vocal organs, or, it may be, to the possession of some diabolical spirit, which rendered the poor "dummy" a being to be dreaded and shunned by everybody who did not wish to be defiled or corrupted, or who had any regard for the safety of his own body and soul. As a "dummy," therefore, our deaf man was treated—by the Spartans not suffered to live; by the Romans deprived of civil and legal rights; pronounced senseless by the great master of philosophy, Aristotle; and banned by the great apostle of Catholicism, Augustine, on the ground that as "Faith comes by hearing," it was impossible for the deaf man, not hearing the word of God, to have faith, and, therefore, according to the Pauline theory, he must be eternally damned. In spite of these opinions we find recorded many cases of "dumb" men recovering their speech, though, as Bulwer says, "the opinion of most men being that original deafness and dumbness is not curable but by miracle, it having never been done by any other than the Divine art of miracle-working faith," it seems doubtful whether the cases recorded were really deaf mutes in the modern sense of the word, and at this distance of time it is highly improbable that we shall ever be able to know. Mankind was not destined by its Creator to live forever in ignorance and superstition. The history of the human race shows a gradual progression from darkness to light, and the history of the education of the deaf is no exception to this rule. As Arnold says, "the Day Star, long desired and waited for, at last arose. He 'made the deaf to hear, the dumb to speak, and the blind to see.' " In the miracle of healing, as related by Mark, vii. 31-37, Arnold sees the beginning of the education of the deaf and dumb. It is worthy of note that our Lord in performing this miracle makes use of various outward signs doubtless, as a learned commentator remarks, "with special regard to each particular case, so as to produce the deepest and most lasting effect, or to draw out the faith of the sufferer." His action was in strong contrast to that of His misguided follower St. Augustine, who could not see that faith was possible by means of the outward sign as well as by the spoken word. Our Lord's example did not find many immediate followers. Professor Ramsay in his "*Christianity under the Roman Empire*," relates the miracle of the dumb man of Khonai as follows:—"From Hierapolis the two Apostles (Philip and John) went to Khairetopa. Long before the church was built, a small chapel existed on the spot. It was the work of a pagan, a native of Laodicea, who became a convert after his dumb daughter was cured and made to speak by the miraculous fountain." Then we have the story, as related by the Venerable Bede, of how St. John of Beverley, who lived in the eighth century, taught or cured a deaf youth; and, as many writers on the subject seem of the opinion that this was the first attempt to teach a deaf mute to speak, and, therefore, the beginning of the oral system, we give the story for what it is worth. "When he came he asked him to put out his tongue, took hold of his chin, and made the sign of the cross on his tongue. When he had thus crossed and blessed it, he ordered him to draw his tongue back, and to speak, saying, 'Speak me one word; say Yea, Yea.' And forthwith the ligaments of his tongue were loosened, and he spake as he was commanded. The bishop then tried him with single letters, and asked him to

say A, and he said A; to say B, and he said B, etc.; and when he had pronounced these correctly, the bishop gave him syllables and whole words to speak. After he had pronounced all these distinctly, he made him speak long sentences, which he did." It must remain an open question, as Hartmann says, whether this was indeed a first attempt to teach a deaf mute to speak; Arnold, following Walther and others, holds that it was a real attempt, though the credulity of the people at those times ascribed it to a miracle. It is not at all improbable that the good bishop really attempted to teach the deaf man to speak, for it is known that he was deeply learned in the sciences and arts as practised in that generation, and which were not so inconsiderable as we may be disposed to think. Despite the dictum of Aristotle and of Augustine, the true relation between deafness and dumbness was not unknown even at that early age, for Mygind mentions that "Alexander of Aphrodisias, a medical author, not particularly well known, who lived in the third century after Christ, seems to have understood the relation between deafness and dumbness. He rejects Aristotle's doctrine of a connection between the nerves of the ear and the organs of speech, and states that it is want of hearing that deprives the deaf mute of the power of speech." Had Bishop John obtained any inkling of the doctrines of this obscure author, and did they set his mind cogitating on the subject when brought into actual contact with a deaf mute? St. John and his compatriots were not merely unlearned shepherds wandering over the northern wilds, teaching a people still wilder than themselves. They inherited the traditions and the culture of the Culdees, that Irish priesthood which was once famous all over Europe for learning and piety. Men thought for themselves, and, aided by the shrewd northern mother wit, it is quite possible that the good bishop had made some progress toward the evolution of a method for educating the deaf. To ascertain the origin of the art in the isolated but successful attempts we read of, it would be difficult to assign the precise period of this invention, for many isolated cases of successful tuition must have occurred, and yet have been unknown to their contemporaries, and still more so to their successors. It is only to chance that we owe the example quoted by Rudolph Agricola:—"I have seen," he says, "an individual deaf from birth, and consequently mute, who had learned to understand everything that was written by others, and who himself expressed all his thoughts by writing, just as if he had the power of speech." That such a thing was incredible seems to have been the general opinion even of the learned of that age, for we read that "Ludovic Vives, a learned Spaniard, treats the account as a myth, because he thought it impossible." To Jerome Cardan (born at Pavia, in 1501), physician by profession, philosopher and mathematician by natural taste and genius, belongs the honor of placing the theory of the instruction of the deaf on a sound and lasting basis. The great work that he accomplished, so far as it related to the deaf and dumb, consisted in his demonstrating that connected thought and reasoning is possible without the intervention of the spoken word, a doctrine the converse of which, following Aristotle and the schoolmen, was generally held by the learned of that age, and is not quite banished even in this. Thus Cardan laid down the principle which the experience of several generations of silently taught deaf mutes abundantly confirms, namely, that a deaf mute can be rendered capable by education of "hearing by the eye and of speaking by writing. He can conceive, for example, that the word *bread*, as it is written, signifies this object when it is shown to him, and his memory will retain this signification. He is able to put down his thoughts in writ-

ing, and also receive and comprehend the thoughts which others express in writing." Hence, he argues, that the deaf mute ought to be taught to read and write; for, though the enterprise is no doubt difficult, it is, notwithstanding, possible. Not only so, but a great number of ideas can be expressed by mimic signs. With hearing people, writing is associated with the spoken word, and through the spoken word with the thought; but it is possible to associate the written word directly with the idea or thought, without the intervention of the spoken word, as it is done, for example, in hieroglyphic writings, of which the character is entirely of an ideographic nature. And he further adds, "Deaf mutes know and honor God, and, since they have an intelligent soul, nothing should hinder them from cultivating the arts and sciences, and achieving the highest attainments."

How different this from the dictum of a modern philosopher, Max Müller, whose terse epigram, "Without speech no reason," would condemn a large class of intelligent human beings to the category of brute beasts? Cardan's speculations resulted in no practical work for the deaf, so far as he himself was concerned. He was a theorist rather than a practical teacher: but the good seed was sown, and soon began to germinate, though in another country than his own. Within a century from the time when Cardan's speculations were published, a trio of distinguished men arose, whose work has exercised a most profound influence on the cause of the education of the deaf for all time. These three men were the Spaniards, Pedro Ponce de Leon, Ramirez de Carrion, and Juan Pablo Bonet. The former of these, Ponce de Leon, is said to have been born at Valladolid, in 1520, and to have belonged to one of the most noble families in Spain. Becoming a Benedictine monk, firstly in the monastery of S. Benito, at Sahagun in Leon, and afterwards in that of S. Salvador, at Oña, not far from Burgos, he taught with success several youths of noble families to write, speak and read the lips. What led to his taking up the task is not known, nor can it be said with certainty whether he was an original discoverer of the methods he used, or whether he learnt from someone who preceded him. The probability is that, as with other discoveries and inventions, he, aided by chance hints derived from an extensive reading in all that was known of philosophy and science, discovered for himself the way to teach this class. At any rate, he seems to have been remarkably successful, for we read that he claimed to have taught his pupils to "speak, read, write and reckon: to pray, to assist at the mass, to know the doctrines of Christianity, and to know how to confess themselves by speech: some of them also to learn Latin, and some both Latin and Greek, and to understand the Italian language: and one was ordained, and held office and emolument in the Church, and performed the service of the Canonic Hours: and he also, and some others, arrived at a knowledge of natural philosophy and astrology; and another succeeded to an estate and marquisate, and entered the army, and in addition to his other attainments, as has been related, was skilled in the use of all kinds of arms, and was especially an excellent rider. And besides all this, some were great historians of Spanish and foreign history: and, above all, they were versed in the Doctrine, Politics and Discipline from which Aristotle excluded them." The results here detailed are, to say the least, remarkable, and Mr. Farrar—himself a deaf-mute of much learning and ability, and from whose excellent Historical Introduction to the English translation of Bonet's work is culled the preceding paragraph, says: "We might well doubt the startling results he tells us he obtained with his scholars, for admittedly they greatly exceed anything we can point to

in our day. Considerable allowance must be made in the case of one who, having achieved what had hitherto been held to be impossible, was naturally desirous of making the most of it. An exuberant imagination and Castilian boastfulness have produced a picture full of brilliant effects. But it agrees in the main with the independent testimony of the various eyewitnesses which we have quoted. And, when all due qualifications have have been made on account of their inflated style, and the facts sifted and shorn of some of their gilding, the results are sufficiently remarkable to excite interest and respect, and sustain Ponce de Leon's claim to be regarded as the first to create a method which rendered speech of practical value to deaf mutes, and so upset the theories which had long prevented its application." The method of Ponce de Leon seems to have been to first teach the pupil to "write the names of objects, then articulation, followed by the association of the written words with their spoken forms." Writing thus had a prominent place. Lip-reading does not appear to have had any attention as a regular accomplishment, its place being taken by signs. There is no distinct trace of the use of a manual alphabet. Ponce de Leon died in 1584, and in 1620, thirty-six years after his death, appeared Bonet's famous book *Reduccion de las Letras*, etc., a work which, in the absence of Ponce de Leon's own account of his method, which was, so far as known, never published, and seems to have been destroyed, the first published method of educating the deaf and dumb. A well-executed translation from the original Spanish, by H. N. Dixon, M.A., F.L.S., with a Historical Introduction by A. Farrar, F.G.S., is now obtainable. Carrion, a contemporary of Bonet's, published a work in 1629, in which he claims to have instructed several deaf mutes, including Luis de Velasco, whom Bonet has generally had the credit of instructing. The question is fully discussed by Mr. Farrar in his introduction to the translation of Bonet's work. Sir Kenelm Digby, a gentleman of intelligence and learning, who formed one of the brilliant suite which accompanied Charles, Prince of Wales, to Madrid, saw the results of Bonet's work, and in his *Treatise on the Nature of Bodies*, published in Paris and London, 1644 and 1645, related, for the benefit of his countrymen, some of the wonderful things he had seen, and, amongst others, that of "the Spanish lord, who was born deafe, that if a gun were shot off close to his eare he could not heare it, and consequently he was dumbe: for, not being able to heare the sound of words, he could neither imitate nor understand them." After describing how this young man had been brought to such perfection of speech and lip-reading, that "he would not lose a word in a whole day's conversation," he says, "It is true, one great misbecomingness he was apt to fall into whilst he spoke, which was an uncertainty in the tone of his voice: for, not hearing the sound he made whilst he spoke, he could not steadily govern the pitch of his voice, but it would be sometimes higher, sometimes lower: though, for the most part, what he delivered together he ended in the same key as he began it. But when he had once suffered the passage of his voice to close, at the opening of it again, chance, or the measurement of his earnestness to speak or reply, gave him his tone, which he was not capable of moderating by such an artifice, as is recorded Caius Gracchus used when passion, in his orations to the people, drove out his voice with a too great vehemency or shrillness. He could discern in another *whether he spoke shrill or low*, and he would repeat after anybody any hard word whatever, which the Prince tried often, not only in English, but by making some Welshmen that served his highness speak words of their language, which he so perfectly echoed that I

confess I wondered more at that than at all the rest, and his master himself would acknowledge that the rules of his art reached not to produce that effect with any certainty." It seems very strange and unaccountable that a man who could not hear the sound of a gun fired close to his head should be able to discern in another whether he spoke shrill or low, while he could not hear his own voice sufficiently to modulate it. Deaf persons who possess a little hearing can generally perceive the sound of their own voices better and sooner than they can perceive that of others. The only explanation that seems possible is that he judged of the loudness of the sound by the visible external signs of exertion which the speakers would unconsciously put forth, and which his trained eye would easily detect, while those around him, who, like Digby, were unacquainted with what is possible in this direction, and were too much overcome with amazement at the novelty of the thing to be very critical, would not notice any difference in the person speaking except the increase in sound. Even those whose minds are engaged in the study of such matters differ widely in their interpretation of the same facts; for, while Bulwer, the first English writer on the subject, seems implicitly to accept all Digby's statements without reserve, Dalgarno, like a cautious Scot, expresses great doubt on the subject, and goes so far as to accuse the priest of "legerdemain." Be this as it may, Digby's account of the wonders he had seen in Spain set men a-thinking, and within the short period of half a century after his narrative had appeared, our literature was enriched by a quintette of works of great value, works which would well repay the earnest and careful study of all teachers at the present time, could they be collected and printed in a handy form. These works are Bulwer's *Philocophus*, published 1648; Wallis' *De Loquela;* and *A Letter to Robert Boyle, Esq., concerning the said Doctor's Essay of Teaching a Person Dumb and Deaf to speak and to understand a language, etc.;* Holder's *Elements of Speech*, 1669; Dalgarno's *Didascalocophus*, published at Oxford, 1680, and since then reprinted by the Maitland Club, Glasgow, in 1834; and Sibscota's *Deaf and Dumb Man's Discourse*, London, 1670. These books are chiefly philosophical treatises concerning the nature of language, and contain elaborate anaylses of the different elements of speech, etc. The teaching of the deaf from birth is dragged in, as it were, to illustrate the new theories which were then beginning to prevail; and, according to the bent of the author and the particular object of his study, we find greater or less attention given to the teaching of artificial speech. Thus Wallis and Holder, whose studies seem to have led them in the direction of the teaching of articulate speech, devote much or most of their attention to a minute analysis of the different sounds and combinations of sounds of which speech is composed; while Dalgarno, on the other hand, who, in his *Ars Signorum*, endeavors to realize that chimera of the learned, a "universal language," gives greater attention to the best manner of teaching *language*, written or spoken, which, as far as the deaf are concerned, he seems to think will be best acquired in its written form. He makes use of a hand alphabet of ingenious construction, entirely differing from the Spanish double-handed or the single-handed alphabet—an alphabet which has been resuscitated of late years by Mr. Graham Bell, who has used it with success to teach written language to a deaf-mute child without the intervention of speech. It is worthy of note that none of these writers adopted the Pure Oral theory, which the German school of late years had evolved, that speech should in every case precede writing. Thus Arnold says of Wallis that "it was by writing rather than by speech that he taught them to understand what was

written to them by others." Holder again, after describing how you may teach a deaf mute by means of a finger alphabet, says, "And you may, when you please, have the recreation of surprising those with admiration who shall hear the deaf person pronouncing whatsoever they (though with privacy) shall desire, without you seeming at all to guide him with your eye or mouth, otherwise than by beckoning him to speak, whilst you secretly describe it with your fingers." On reading this one feels that Dalgarno would have been quite justified in accusing Holder of "legerdemain." Again he says: "After thorough practice of syllables, etc., you are to teach him the knowledge of words, but it would do well in the meantime to make him speak and write some sentences to inure him to connexion of speech. And here you may easily show him visible bodies and colors, and tell him the names of them, and you may *by signs* make him understand local adverbs, and some others of qualities, well, ill, as also such adjectives as represent sensible qualities, as bitter, sweet, etc., and many other kinds." Wallis did not confine his efforts to the teaching of speech. According to Degerando, his method consisted of four elements: *writing* and *reading*, *the manual alphabet*, *logical induction* aided by examples, and *gestures* or *signs*, confined solely, however, to the signs used by the pupil himself. He claims to have taught several deaf mutes with success by this method.

The results achieved by these workers in the cause of the deaf mute were slow in bearing fruit. Henry Baker (1698-1775) a son-in-law of De Foe, kept a private school for deaf mutes in London for some time, and his Book of Lessons, in four MSS. volumes, has been lately unearthed by the industry and research of the Rev. T. Arnold: and in 1760 Braidwood founded in Edinburgh the school which was made famous by the visit in 1772 of Pennant, and still later of Johnson, while on his tours to the Western Highlands of Scotland. These teachers endeavored to keep the methods they employed as secret as possible, but Braidwood's method is thus described in Arnot's *History of Edinburgh*, 1779:—"He begins with learning the deaf articulation or the use of their vocal organs; and at the same time teaches them to write the characters and compose words of them. He next shows them the use of words in expressing visible objects and their qualities. After this he proceeds to instruct them in the proper arrangement of words, or grammatical construction of language." "The deaf (Mr. Braidwood observes) find great difficulty in attaining pronunciation, but still more in acquiring a proper knowledge of written language. Their only method of conversing is by signs and gestures. Their ideas are few, being entirely confined to visible objects, and to the passions and senses, the former of which they delineate by figures, the latter by gestures. The connection between our ideas and written language being purely arbitrary, it is a very hard task to give the deaf any notion of that mode of conversing, theirs being only hieroglyphical. Another, and still a greater difficulty, is to enable them to comprehend the meaning of the figurative part of language. For instance, they soon understand *high*, *low*, *hard*, *tender*, *cloudy*, etc., when applied to matter, but have not the slightest conception of these qualities when applied to mind. Notwithstanding these difficulties, the deaf attain a perfect knowledge of written language and become capable of speaking and writing their sentiments in the most distinct manner, and of understanding fully what they read. Being thus advanced, they are capable to learn any art or science (music excepted) and to translate one language into another. Mr. Braidwood's pupils are under his tuition from three to six years, according to their age, capacity, and conveniency. When we visited this academy we found that the boys could not only converse by the help

of the artificial alphabet they learned by putting the fingers into certain positions, but they understand us, although perfect strangers to them, by the motion of our lips. In this manner they actually conversed with us, returning an answer to us distinctly, yet slowly, *vivâ voce*. A good idea of Braidwood's method of procedure may also be learned from a book entitled *Vox Oculis Subjecta*, published in 1783 by a parent whose son Braidwood taught. One pupil of Braidwood's, the Rt. Hon. Francis Humberstone M'Kenzie, Baron Seaforth, achieved high distinction, or rather, as chief of the clan, had greatness thrust upon him. This gentleman became deaf from scarlet fever at the age of twelve, or, according to another authority, at the age of sixteen. It is said that for a time he also lost his speech. In 1783 he succeeded to the chieftainship of the clan M'Kenzie, becoming afterwards Governor of Barbadoes, in which capacity he acted with great humanity and public spirit. He raised the regiment called the Seaforth Highlanders, of which he was the first colonel, though we do not hear of his taking part in actual warfare.

In the meantime the light was gradually spreading in other countries. Van Helmont, at Brussels, had conceived the idea of experimenting with deaf mutes in the hope of bolstering up his theories regarding the form of language natural to man, and, amongst other wonders, claimed to have taught a deaf mute in three weeks to answer questions addressed to him; but it was necessary that he should be spoken to slowly, and with the mouth well open. "This deaf mute," he adds, "afterwards learnt in a very short space of time the Hebrew language by his own efforts, and without a master, after having learnt by the method indicated to read and combine the letters, solely by comparing the Hebrew text with a German translation." Notwithstanding this wonderful success, Amman, a Swiss physician who practised at Amsterdam, and had already commenced to teach deaf mutes, says that Van Helmont confessed to him that "when he saw and heard me teaching, he acknowledged, with the greatest candor, that I had not only not borrowed anything from him, but that I had greatly surpassed him in practical results." If this were so, then Amman's results must have been very wonderful indeed. If we may fully believe what he himself recounts of his success, it was certainly something to be proud of: for he records of a young lady whom he taught, that in two months this charming young person not only read with an articulation sufficiently distinct, but put down in writing what was slowly pronounced before her; she spoke on all subjects with intelligence; although deaf, she listened with her eyes to those who spoke, and answered correctly to questions which were addressed to her. Amman wrote a work, entitled *Surdus Loquens*, which has been several times reprinted, and of which an English translation was made by Daniel Foot in 1694, and more recently by Charles Baker, of Doncaster, in 1873. Degerando says that "Van Helmont and Amman are the veritable chiefs of that school of writers who, in treating of the education of deaf mutes, have made the essence to consist of the artificial restoration and use of the voice." Amman and Van Helmont had no immediate successors in the country of their adoption, but the seed which they sowed was destined to bear fruit in the neighboring territory of Germany, where it blossomed under the fostering care of logicians and savants into the full-grown plant which is known as the German system. The credit of first placing the German system on a solid foundation belongs to Samuel Heinicke, the son of a small landowner, born at Nantzehütz in 1723, who, designed by his father to succeed him as a farmer, went his own course, and after tempting fortune as a soldier, schoolmaster and singing master, eventually settled down to a successful career

as a teacher of deaf mutes. He had studied Latin, French and music, in addition to the ordinary schooling. "Nature," says Arnold, " had made him a teacher, quick, versatile, fruitful in expedients, and facile in adapting his methods to the capacity of his scholars." That he was not lacking in self-confidence, we may judge from his statement that *he achieved in a few months more than others have done in as many years.* These *others* included, in addition to the cases of Van Helmont and Amman above mentioned, his fellow-countryman, Camerarius, who records a case of a deaf mute, blind from his third year, who passed the university examinations with great success, was made a doctor of laws, and lectured at Cologne with great renown—quoting from memory alone many works *that he had neither seen nor read;* also Schott, Kerger, Raphel, who taught his eldest daughter to speak so well that, "in speaking she could hardly be distinguished from others. Printed works and writing traced on the hand she freely read. Her composition was good, her acquaintance with the doctrines of religion were extensive, and her inferiority in society could hardly be perceived." When, in addition, we mention Lasius, Arnoldi, and others, who may be considered the pioneers in Germany of the work which Heinicke permanently established, it will be seen that he was certainly not over-burdened with modesty. Nor was he of a generous disposition, for he sedulously concealed his method from the public, with the object of making as much money out of the business as it was possible for him to effect. His great success as a teacher attracted the attention of the Elector Frederick Augustus of Saxony, under whose patronage, and with whose support, Heinicke established at Leipsic, in 1777, a Deaf and Dumb Institution, which may be regarded as the parent of all the institutions and schools at present in Germany. Arnold considers that it is hardly just to call Heinicke the founder of the German system, as he only gave a more logical application to the principles taught by Bonet, Wallis and Amman. If he was not the founder, he was at any rate a good foster-parent; for, though it is difficult, as Degerando says, to find out what was the particular invention which he claimed for himself in his teaching, yet it is certain that he was one of the first to affirm strongly and bring into notice the theory that, in the education of the deaf, speech was to hold the first place, and become the sole instrument of the language and mental development.

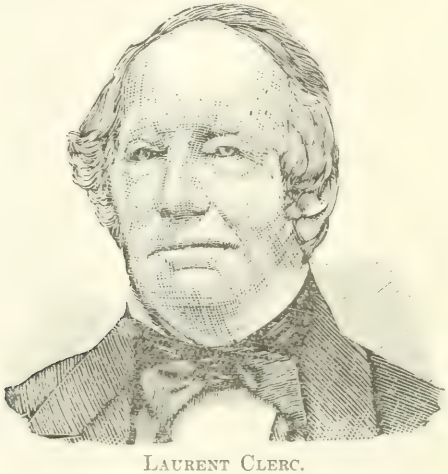
Meantime, events in France were gradually shaping themselves toward the elucidation of a system which was to have a world-wide influence on the education of the deaf, an influence which still lingers amongst us and is all-potent in some places, and will, in all probability, make itself felt for all generations. As in other countries, various isolated attempts were made by the ingenious and benevolent people, whose hearts were touched by the sad condition of mutes with whom they were brought into contact in the various relations of life. Amongst these early cases may be mentioned the deaf mute Guibal, whose will, written by his own hand, was allowed by the Parliament of Toulouse, 1679; Saboureux de Fontenai, whose education was commenced in 1746 by a builder named Lucas, and a specimen of whose composition is given by Degerando in the shape of a long extract from a letter written by him to a lady in 1764. This young man had the advantage of two other early French teachers, viz., P. Vanin and Pereira. The latter, a Spanish or Portugese Jew, is considered by Arnold to have been the real pioneer of the work in France. We learn that he divided the period of instruction into two parts, which he called "pronunciation and intelligence." By the first he taught his pupils to read and pronounce the French language, though without understanding anything of it, exce-

the most familiar phrases and words of common daily use. In the second period he taught them all the rest of their instruction, viz., to understand the value of the words contained in all the parts of a discourse, to make

THE ABBE SICARD.

Sicard was at one time head of the Institution Nationale of Paris, and received his trainin under the famous De l'Epee.

proper use of them, either in speaking or writing conformably to the rules of grammar and the particular genius of a language. The first part of the



LAURENT CLERC.

One of Sicard's favorite pupils, the first apostle to the deaf-mutes of the New World.

course, he considered, only required twelve to fifteen months, the second part needed a much longer period. Like the early Spanish and English teachers, he made great use of dactyology, employing a one-handed alphabet to give his pupils practice in repetition of words and sentences and to direct

their pronunciation. This alphabet of his differed from the two now generally in use in that he tried to figure the sound rather than the actual written letters. Pereira acquired much fame by his achievments, had his work noticed by the philosophers Rousseau and Diderot, and his pupils' attainments certified by the French Academy on three distinct occasions, but as he tried to keep his methods secret, he, like his contemporary Ernaud, did little or nothing for the real furtherance of the cause, beyond, perhaps, preparing the public mind to entertain the idea that it was possible, after all, to educate the deaf.

The real credit of popularizing the idea that the instruction of the deaf and dumb was not only possible, but a necessary Christian duty, belongs by common consent to the Abbé de l'Epée, who must be regarded, as Degerando says, not merely as the instructor, but veritably the father of the deaf and dumb everywhere. This benevolent man was born at Versailles in 1712, of a noble family, and in easy circumstances. Educated for the church, his duties as a *curé* brought him into contact with two young girls, sisters, who had been deaf from birth. Touched with pity at their desolate condition, he set himself to try and find means to alleviate their sad lot. His success was great and surprising. His school soon rose in numbers, and on it he expended his modest fortune of £600 per annum, seeking aid from no one, but denying himself the necessaries of life rather than that his protégés should go without the bodily, mental and spiritual food which he henceforward made it the business of life to supply to them. In his first attempts he used writing, associating the words with the objects; but a perusal of the Spanish book, *The Art of Teaching the Deaf and Dumb to Speak*, put him on a new track, and considerably enlarged his views of the work before him. The perusal of Amman's *De Loquela* would tend in the same direction. He experimented with success in the teaching of articulate speech, and a close perusal of his work on *The True Manner of Educating the Deaf and Dumb* shows that he had thoroughly mastered the theory of the art of teaching the deaf to speak, and that only perserverance, time, and opportunity were lacking to enable him to achieve as great results by this method as have been attained by any before or since. Full of French vivacity, however, without assistance, and burning to instil the doctrines of Christianity into the hearts of his numerous disciples, the teaching of these ideas by speech alone was too great a task even for his ardent nature; and so he conceived the brilliant idea of taking the crude gestures which the uneducated deaf make for the purpose of communicating as far as possible their wants and wishes, and working them up into a systematic language, which should be to the deaf for all time what the mother tongue is to every hearing child of Adam. By long practice he so perfected this new instrument that his pupils were able to write down from his dictation long sentences on all manner of subjects. Fascinated by his discovery, he gave up the teaching of articulate speech, and confined himself to giving instruction to his pupils in this novel language. At first the public were apathetic, but by and by his system began to attract notice. Royalty smiled on him, learned bodies vied with each other in patronizing him, rivals attacked him, his pupils adored him; and, as the immediate result of his painstaking and self-denying efforts, institutions for the education of the deaf began to spring up in every civilized country, and the movement thus begun has never stopped, but has gone on widening and widening with each succeeding year. Amongst those who attacked De l'Epée's system was the German Heinicke, but as he would not publish his own method, and shrouded it in mystery as far as possible, while de l'Epée took every

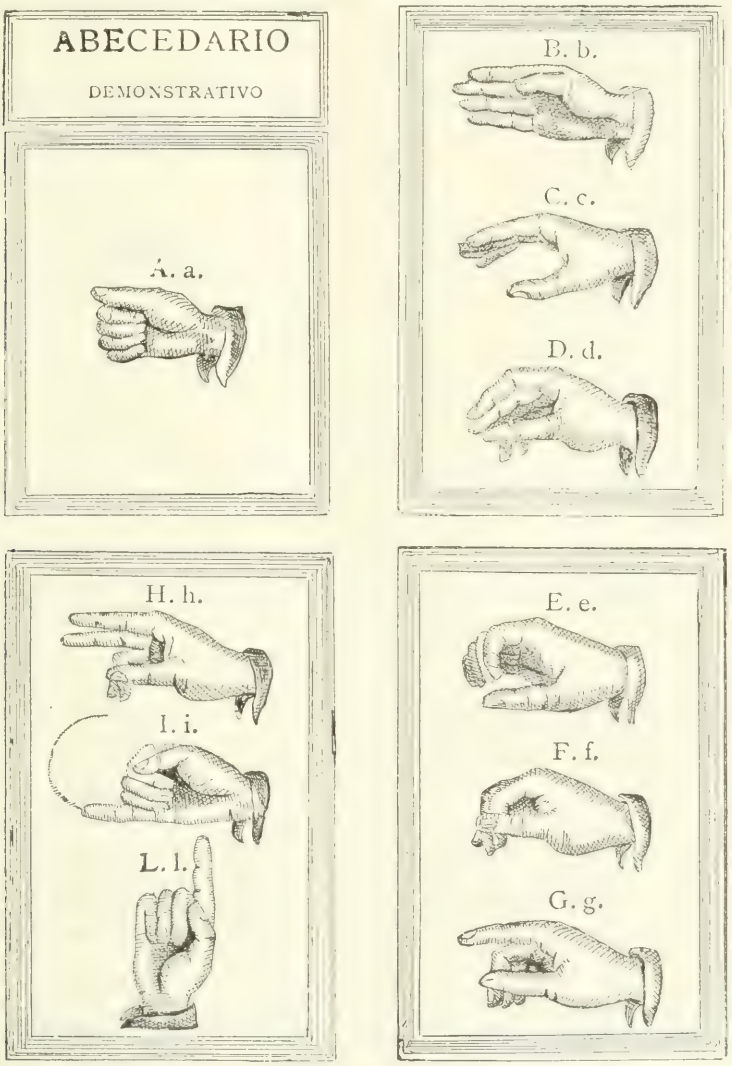
opportunity of showing the uses and advantages of his own, it is no wonder that the public and the societies, who were called in to judge between them, should have given the preference to the one who, at any rate, did not ask them to take matters on blind trust, but appealed to what they saw placed before their eyes. It is to this great open-mindedness of De l'Epée's, joined to the great ease with which the deaf and dumb can learn to converse by this method, that the French system owes its wide-spread influence. As an instance of the way in which the system was spread, we may mention the story of its introduction into America. A young minister, Thomas Gallaudet by name, wishing to learn how to teach the deaf and dumb, so as to introduce it into his native country, applied to Dr. Watson, of London, and then to the Braidwoods for information and advice; but found to his astonishment that it was considered by them as a secret art, not to be lightly imparted to any one. Gallaudet then turned his steps to Paris, where he met with a very different reception. After staying there a considerable time he returned to his native land, along with a deaf and dumb man named Clerc, and together they started the work in America, which has now grown to a magnitude which quite overshadows anything that has been done in any European country. The direct result of this obstructive action of Braidwood and Watson was that the French system of artificial signs obtained first hold in this country. Several generations of deaf mutes were educated by its means, and a sentiment in its favor was created which is still all-powerful, notwithstanding the frequent assaults which have been made upon it in recent years by enthusiastic Oralists. In making these remarks, we wish to guard against the assumption which is common in some quarters, that the followers of De l'Epée confined themselves merely to the teaching of mimic gestures and the use of the sign language. This was their first care undoubtedly; but it is certain that De l'Epée's successor, the Abbé Sicard, and those who followed made use of it for the purpose of teaching, more or less perfectly, the written language of the country to their deaf pupils. Hence it is utterly false to assume, as Hartmann does, "that the French deaf mute can only hold intercourse with those who have learned the sign language." If Hartmann had read some of the writings which Clerc, the deaf and dumb teacher who accompanied Gallaudet to America, and also those of other deaf mutes educated on the French system, he would surely never have ventured on such a rash statement.

The instruction of the deaf and dumb was now no longer confined to isolated cases, or regarded merely as a subject of philosophical curiosity. It had been demonstrated that as a class they were capable of receiving instruction like their fellow-beings in all the subjects of a liberal education, and this being once fully established, Christian benevolence immediately began to respond to the calls made upon it, and schools began to rise in every centre where arts and sciences flourished. A free school for deaf mutes was established at Vienna in 1779—taught at first on the French system, but afterwards on the German; and this was followed by the one at Prague in 1786. Prussia followed suit in 1788 by the establishment at Berlin of a Royal Institution under the guidance of Eschke, a son-in-law of Heinicke. In our own country, the subject was not allowed to drop. In 1780 a public institution had been talked about, but little or no progress was made till 1792, when a society was formed in London with the title of the Asylum for the Deaf and Dumb. The first teacher was Watson, a nephew of Braidwood, who some time previously had removed his private school from Edinburgh to Hackney. Dr. Watson, in 1809, published a work on *The Instruction of the Deaf and Dumb*. About this time also appeared a

A very ungraceful alphabet in use in some parts of Italy and Mexico. Some of the letters are represented by motions and positions of the fingers, and others are indicated by touching different parts of the face, pulling the ear, etc.

translation of the Abbé De l'Epée's book on the same subject. Watson's system was on the line of the early Spanish and English teachers, and his book may be considered as a full exposition of the British Combined System. He used speaking, writing, reading, drawing, and natural signs as his means of instruction. He thus describes his own system: "Writing and reading occupy the first rank; the lip alphabet and artificial pronuncation are taught early in order to enlist the service of speech; the manual alphabet is used to join these two orders of signs to those of writing; the use of gestures and of pictures accompany these different materials as a means of interpretation, which serve to facilitate the explanation of the meaning of words and to help their association with the ideas. In this way each word is fixed in the memory by a quadruple chain; four ways are open to get at the knowledge of them." Mr. Watson was of opinion that this multiplicity of means served to impress the words better on the memory and intelligence of the pupil, without producing any complication or embarrassment to him. He commenced by teaching, as aforesaid, articulation and lip-reading, writing and reading, taking all on together. Each sound was taught separately. The pupil saw the teacher pronounce the sound, or word, which he imitated, then wrote on the slate, learning at the same time to spell on his fingers. Signs and pictures were used to recall to the mind objects which were not present to the eye of the pupil, but of the two Mr. Watson used signs in a much less degree than the French teachers and made a much more extended use of pictures. He set himself to observe the signs made by his pupils amongst themselves, and employed them to illustrate his lessons; but he was opposed to the elaboration of these signs into an artificial language. He thought so highly of picture-teaching that he composed a book of pictures specially for the use of his pupils. He speaks of the use of signs as follows: "What should we expect from a European who should undertake to teach his own regular, copious, and polished language to a South Sea Islander, who was henceforward to live among Europeans, and whose scanty vocabulary extended only to a few words, barely sufficient to enable him to express, in a rude manner, what was required by the uniformity of his condition and his paucity of thoughts? Should we suspect that the teacher would set about new modelling, methodizing, and enlarging this rude and imperfect language as the readiest method to make the Islander acquainted with the European tongue; especially, though this new-modelled language were the thing practicable, which I apprehend a few will contend for, could be of use but to these two persons? Does this supposition appear ridiculous? How much more fanciful and useless is an attempt to methodize signs for the instruction of the deaf and dumb? Would it not be a more natural and rational mode of procedure for the teacher to begin by watching the objects and occasions to which his scholar applied the words of his barbarous speech; that, by knowing *these*, he might gradually substitute the words of the language to be taught, using the *former* only as an introduction to the *latter*?" Other institutions were not slow in springing up, after the example thus set by the metropolis. The Edinburgh Institution was established in 1810, under the guidance of Mr. Kinniburgh. This was followed in 1819 by the establishment of the "Glasgow Society for the Education of the Deaf and Dumb," or, as it came to be popularly called, the Glasgow Deaf and Dumb Institution. Considerable trouble was experienced in the first years of its existence in finding a suitable teacher. The changes were many and numerous; but at last, in 1831, the directors were fortunate in securing the services of one who, for the long space of forty years, guided its destinies with rare skill, tact and de-

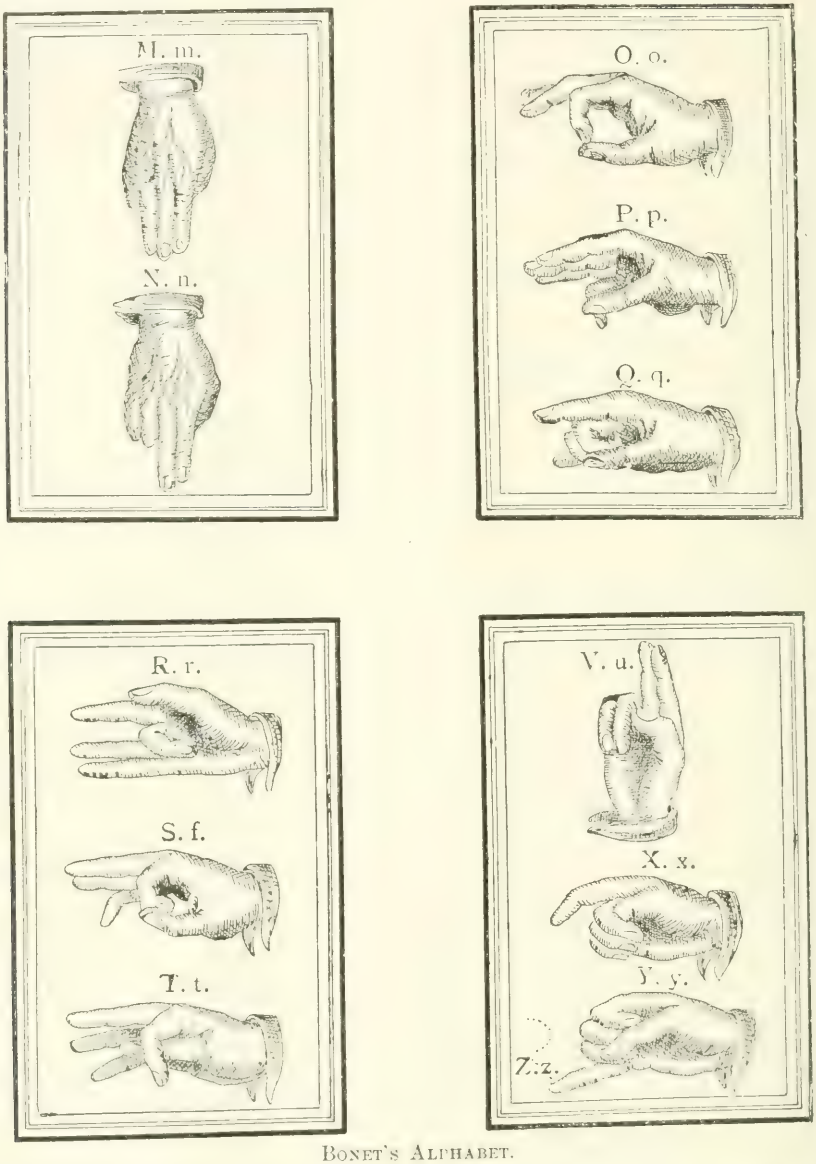
votion, and succeeded in turning out a set of pupils who in written language have had very few equals and no superiors. This was Mr. Duncan Anderson. At the beginning of his career he, like most of the early British teachers, gave up most of his time to the teaching of speech; but gradually relaxing his efforts in this direction, he concentrated his energies on the teaching of written language, in which his pupils, as we have said, excelled



Bonet's Alphabet.

greatly. Unfortunately, Mr. Anderson never published an account of his system, and consequently we are left without an authoritative exposition of his method; but an effort will be made to reconstruct it as far as possible from the recollections of his old teachers and pupils. In conjunction with Mr. Baker of Doncaster he drew up a series of pictures illustrating the common forms of language, as applied to the common facts and incidents of everyday life. These pictures were at the time exceedingly valuable, though

they have now become rather obsolete, owing to their diminutiveness, and not exactly corresponding in all respects to the features of present-day life; but the idea was a good one, and, as far as the state of engraving in those days went, well executed. Mr. Anderson also drew up a graduated dictionary for the use of the deaf, which was very useful. Amongst other



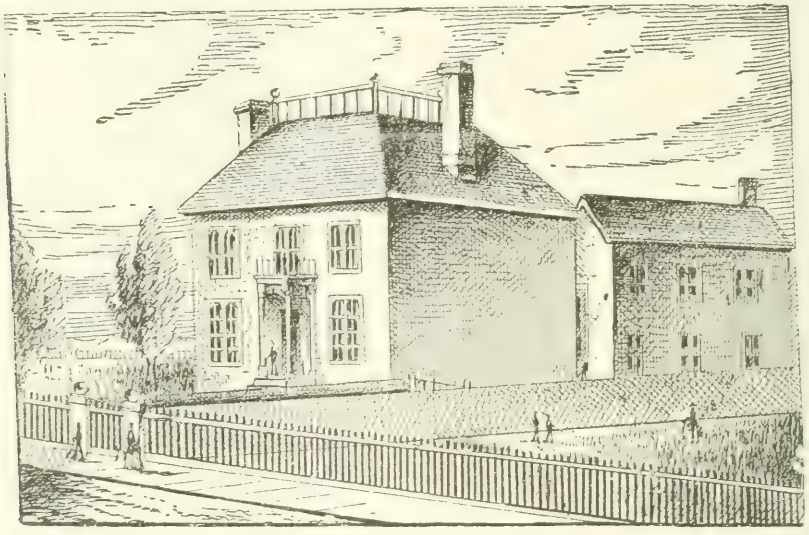
Bonet's Alphabet.

workers and writers of the past generation whose works exercised a profound influence on the course of deaf-mute education in this country, mention must be made of Charles Baker, of Doncaster, and Scott, of Exeter. The former is well known as a compiler of a variety of lesson books which, drawn up in the first instance for use among the deaf, have been extensively used in hearing schools, not only in this country, but on the Continent and

all over the world. Scott, on the other hand, has not been so well known as he deserved to be. His work on the Deaf and Dumb, published at Exeter in 1870, shows a grasp of the principles underlying the work which can only be obtained by a gifted mind after long reflection and much experience; while one or two lesson books which he constructed, and notably his *Reading Made Easy* and *First Book of Exercises in English Composition* are constructed in a manner which show him to have been a thoroughly practical teacher, an opinion which intercourse with some of his old pupils, whose fluency of language is surprising, tends greatly to confirm. His main object, like that of Anderson, Baker, and others, was the teaching of written language. Signs were freely used to explain the meaning of the written words and sentences which were put up on the board for the pupils to learn; the objects referred to were pointed out whenever possible, and pictures used whenever the actual objects could not be had. Action teaching, so much in vogue at the present day, was not neglected. Moreover, it is a great mistake to assume, as is too often done by advocates of the Pure Oral Method, that systematic signs were generally taught to the pupils after the manner of De l'Epée or Sicard. That this was done in a few schools cannot be denied—the writer's early experience was acquired in a school where signs were really taught on the original French method—but men like Scott and Anderson went beyond that point, and only made use of the signs which they saw their pupils using, for the purpose of quickly illustrating and explaining the meaning of words and phrases, the explanation of which, by any other method, would take up more time than in their opinion the thing was worth. Any one who is in doubt on this point may easily be convinced by reading the Report of the Conference of 1851-1852, where it is expressly laid down that the use of the signs should be discouraged as much as possible. While the English teachers, following the example set them by the French and American schools, had thus been gradually giving up all attempt to teach speech to the deaf, so that in some schools it was abandoned altogether, and in others it had dwindled down to a poor hour or half-hour's drill in articulation, which had little, if any, connection with real language teaching, the German school was gradually perfecting its method, through a long course of experiment, till it reached a point of perfection it had never before attained. Taking as its fundamental principle the dictum that "Human thought is impossible either by gestures or by writing, but most assuredly by the spoken word only," the logical German mind set itself to work out a system of education for the deaf based on this principle. After many experiments and many failures the Pure Oral or German system was evolved, by means of which the deaf can, its advocates claim, be restored to society as living members, speaking and lip-reading so well that they are able to take their place as members of the community on terms almost of equality with hearing and speaking people. The evolution of this system is due in the first place to Moritz Hill, who, following the footsteps of Heinicke, improved the system, by purifying it of some of the signs which, in spite of his theories to the contrary, still encumbered his teaching, and secondly to Arnold of Riehen, whose pupils, according to the testimony of many who witnessed the results of his teaching, attained to a perfection of speech and lip-reading which was simply marvellous, and indeed almost incredible to even those who witnessed them.

Stimulated by the results obtained by these and other distinguished teachers, an agitation was begun about twenty-five years ago for the introduction into this country of the German or Pure Oral system, an agita-

tion which has led to many improvements since it was commenced. The starting of a college for training teachers of the deaf on the Pure Oral system at Ealing, Middlesex, and the association for promoting the Oral teaching of the deaf at Fitzroy Square, London, were among the first fruits of this new movement. The controversy between the advocates of the two systems, which had lulled somewhat since De l'Epée's time, broke out with renewed vigor. A conference in London in 1877, which led to many important changes, notably the introduction of Oral teaching into the Manchester school, and paved the way for the great European Conference at Milan in 1880, when the majority of the delegates, many of whom had previously followed the French method, declared enthusiastically in favor of the Pure Oral system. The flowing tide was with the Oralists; several European governments took up the work as a national undertaking, and passed laws rendering the education of the deaf compulsory, and in most cases directly favoring the Oral system. Our own country, somewhat slower



The first school building devoted wholly to Deaf-mute instruction in Ontario, 490 Queen Street, Toronto.

in matters educational than its rivals abroad, acted with characteristic caution. Before passing any law on the subject, it was thought desirable that due inquiry should be made as to the need of education for the deaf and dumb, and it was only after much agitation and pressure from the friends of the cause that in 1885 a Royal Commission was appointed to make inquiry with a view to legislation. The result was the issue of a report which, while not satisfying absolutely the extreme partisans on either side, has formed the basis of legislation which we may confidently hope will be of untold benefit to the generations yet to come. Moreover, the issue, along with the report proper, of the voluminous evidence taken from experts, and the accounts of the visits to schools and other matters pertaining to the inquiry furnish a mine of material which is of the highest value to all students of the subject. The issue of this report has been followed by the passing of an Act which, in Scotland, came into force on the 1st January, 1891, and in England on the 1st January, 1894, making compulsory the attendance of all deaf children at school from the age of seven to sixteen, and placing

on school boards and school authorities the obligation of seeing the Act enforced, and of providing proper instruction for all who, through poverty, are unable to provide it themselves.

The establishment at Washington, U.S.A., of the Volta Bureau for the collection and diffusing of information regarding the deaf, by Professor Graham Bell, the celebrated inventor of the telephone, promises likewise to be of immense value to all workers in the cause, and we may hopefully trust that the day is not far distant when everything that can be suggested by science for the good of the deaf will be carried out; and if it is not possible for their ears to be unstopped, at least let us hope that their education by the eye and the touch will be so perfected that they will fall little short of their hearing brothers and sisters in everything that pertains to the character of good and loyal citizens.

Coming down to our own times, our Historian, Mr. Paul Denys, a valued teacher in the Institution at Belleville, published recently a little pamphlet, from which the following is reproduced as worthy of being preserved in permanent form:—

> There is in every human heart
> Some expectant, workable part,
> Where seeds of love and truth might grow,
> And flowers of generous virtue blow;
> To plant, to watch, to water there—
> This be our duty—be our care!

Every age boasts its own special achievements. Whether it be in the fields of valor or the avenues of art and learning; whether in mechanical progress or scientific discovery; what man, mind, inquiry unearths, unravels, unfolds, the annals of fame, in their good time, proudly proclaim. And whilst we may with wonder dwell on dauntless daring, pause before the seeming endless march of human genius, watch with keenest interest all the developments of modern research and study, there is one attainment, one exploit, one triumph which to-day stands out in single, sublime splendor—one that lifts itself high above all that this century, rich as it has been in skilled accomplishments, can show—one that the humane, the good, the noble shall not cease to exalt in, rejoice in and give praise for; the emancipation, deliverance redeeming, by heroic efforts, of the great silent family from the prison of darkness, the shackles of forced isolation, the slumbers of an intellectual night, the famine of a hungering and thirsting soul! . . The sun that first broke upon the humble home of Montmarte, that later touched our shore with one of its gleams and is now shining full over both continents, has, it is conceived, brought glad hope to many an anxious, loving heart. And why so glad? . . Ah! Have we, upon whom nature has lavished all her choicest gifts, ever given a thought to the poor, dear ones from whom the unspeakable blessing of speech and hearing were withheld? Have we not time and again seen the big, warm tear rolling down the parent's cheek in the sight of the afflicted offspring? Has not the bright eye of some silent child as his glance, full of appeal, rested upon you, awakened an echo in your inmost feelings? Has not your heart gone out to those poor, innocent little ones as their tiny hand was extended to you at, perhaps, a father's bidding? There they were, bright, young, yet captive, and you would almost imagine—imploring with their look your reclaiming action in their behalf—awaiting the "ephatha" that was to open their mind to light, loosen their chains and bring them to our society and companionship. Yes, we have seen and felt all and rejoiced that this age could boast the grandest conquest Christian heroism and love, philanthropy and zeal could inscribe upon their standards! And if the

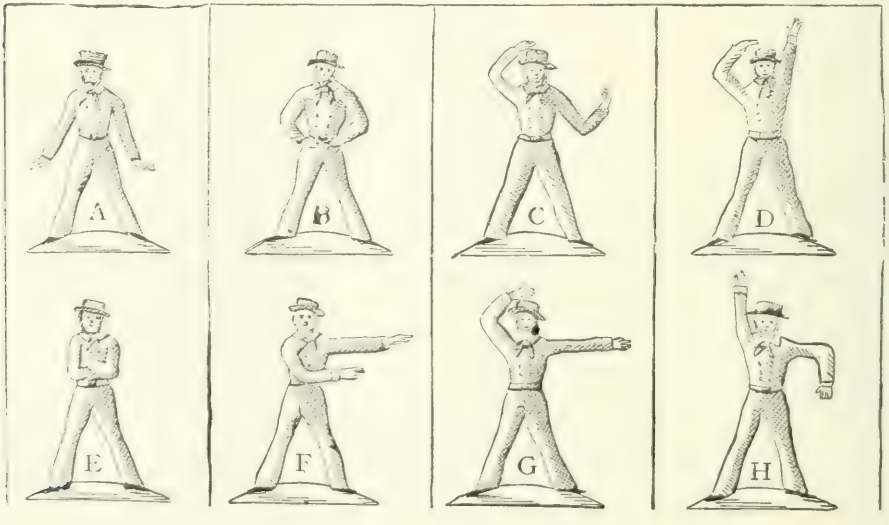
light brought was in proportion to the darkness that hitherto prevailed, one will easily understand the joy with which the breaking beams of hope were saluted.

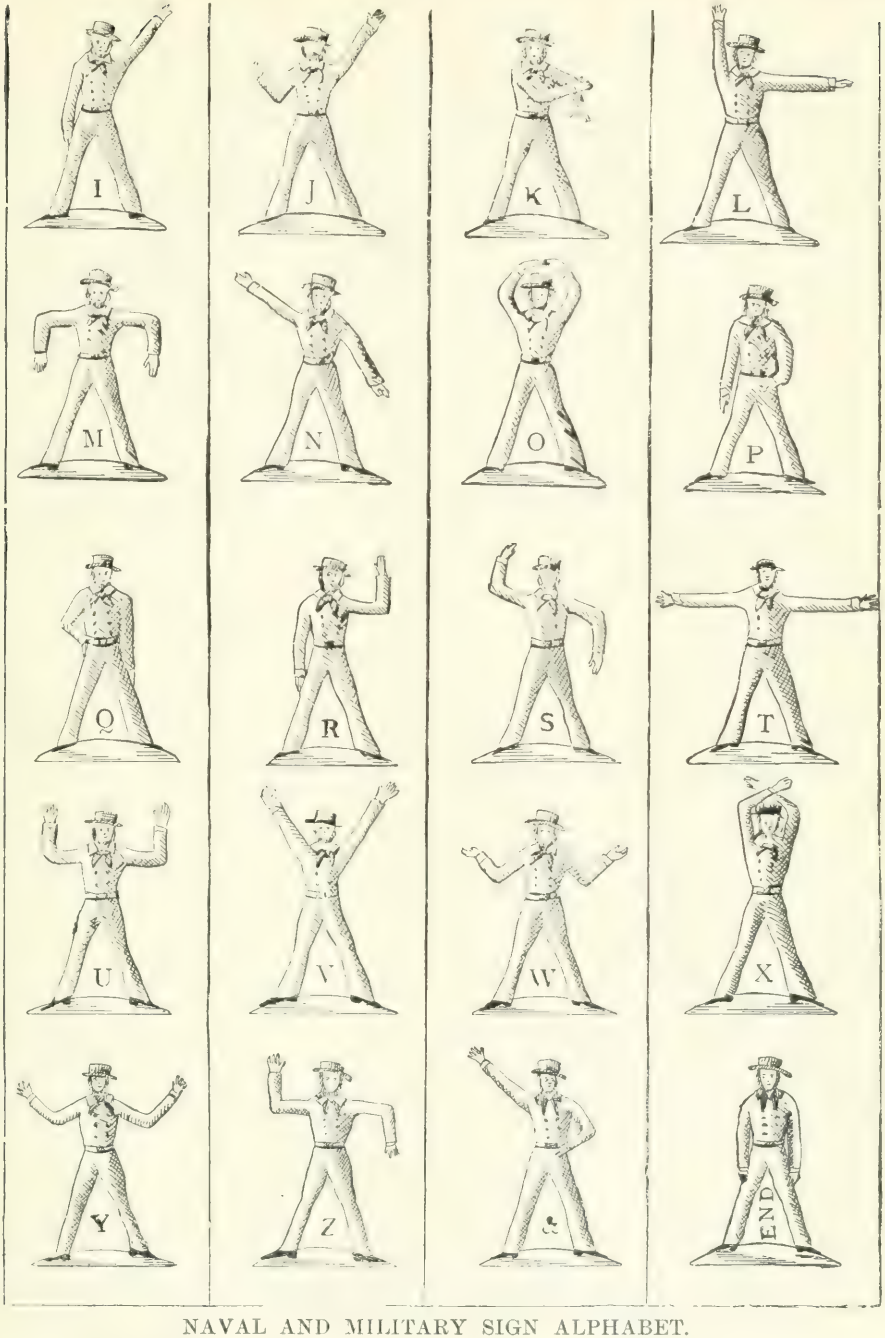
We need not here recall how Greece and Rome, Aristotle and Lucretius looked upon these disinherited of nature, not allude to the causes which in Biblical times, were believed to preclude speech. . . Was it not the late General Butler who gave it out that a deaf-mute at best was but *half a man*? . . Add to that the early testimony of Augustine, who would make faith depend on the possession of hearing and all the other negative appreciations that, at various times, were passed upon these ostracised beings, and you will not wonder at the world rejoicing when, as in the days of miracles, the news was not less wonderfully proclaimed, "the deaf hear and the dumb speak."

Confidence, says Locke, will carry us through many a difficulty; and when that persuasion is supported by power of mind and fed with noble impulse, be the task ever so arduous, it eventually must yield. It was no doubt under the incentive of similar reflections, heightened by burning charity, that the great De l'Epée, rising equal to his sublime mission, "built himself an everlasting name" when he severed, as with Orlando's sword, the thousand ties of past impossibilities from the car of future triumph. Skill and benevolence made one, brought forth the regenerate principle that obtains to-day throughout the civilized world, and has set 600,000 or more interesting fellow-beings free. All hail!

1760 sees the great Abbe at work.

1815 sends Dr. T. H. Gallaudet across the water in quest of the processes used in the art of teaching the deaf. England is cold. France opens wide her arms. He returns with Clerc and in 1816, founds, at Hartford, the first school of the kind in America. Quebec, Canada's eldest daughter, soon follows, opening an establishment in 1831. Forced to suspend after five years, her children are excluded from the benefits of instruction until 1847, when the Mile-End Institution, now so prosperous, is started. Nova Scotia, whose school began in August, 1856, comes next for the honor of a step in the laudable direction. And here we may well ask why the sum of $80,000, voted some years before by the old Canadian Parliament towards the erection of an asylum for the deaf and dumb and the blind in Upper Canada, was never expended? The only apparent reason may be sought in the com-





NAVAL AND MILITARY SIGN ALPHABET.

A system at one time in use for communication at a distance for military and naval purposes.

plications and political changes of those times and the engrossing of the public mind therewith. It was not long, however, before a better day dawned for the cause in this part. Mr. John Barrett McGann, a man of scholarly attainments and benevolent nature, in 1858, opened, at great per-

sonal sacrifices, a school in Toronto, in which many prominent citizens soon became interested. As the commencements of a work of this kind are always trying, many were the difficulties encountered. In 1864, Mr. McGann removed his school to Hamilton, where he met with more generous support. Public attention had now been aroused, and a grand move, one worthy the Banner Province of the Dominion, was made, which resulted in the establishment at Belleville, in 1870, of the Ontario Institution which stands to-day a monument of the liberality of the people as well as a credit to the profession. Ontario does nothing by halves. Less prompt than her sister Provinces, when she realized that the time for her had come to execute the grand work, she set to it with a will, a munificence that rivalled similar efforts in any clime. A large tract of land was purchased in the immediate vicinity of Belleville—a pretty, young city with a fair name and fairer people—and a majestic building was seen to rise on a commanding spot, casting its imposing proportions upon the placid waters of far-famed Quinté.

The 20th of October of that year witnessed the opening of the school, which was done amid pageant, pomp and ceremony. Lieutenant-Governor W. P. Howland, Attorney-General John Sandfield Macdonald, Hon. Treasurer E. B. Wood, and a host of other distinguished visitors were present. J. W. Langmuir, Esq., Government Inspector, and W. J. Palmer, Ph.D., first Principal of the Institution, 1870-79.

The *three* pupils who made their appearance that day were: Duncan Morrison, Ettie Grace, and Sarah Earl. The same term closed with 100 children. Having marched from prosperity to prosperity, the Institution, as to number of pupils, now ranks seventh among the eighty-seven establishments of the kind in the United States and Canada, whilst in effectiveness, generous provision, careful management and general results, we have the ambition to believe ourselves second to none.

In 1879, Dr. Palmer resigned, being succeeded by Mr. R. Mathison, the present Superintendent and Principal of the School.

A late distinguished visitor, vividly impressed with what he saw, paid the school this very high tribute: "From time to time the staff has been changed, until now it seems impossible to improve it." Sweet as this is to our ears, we shall not cross our arms content with past laurels, or sit down and weep at no worlds to conquer. Amphion with his lyre could charm the stones into the walls of Thebes, but there is no such magic for a teacher of the deaf. Unsparing devotion, constant toil, method, patience, such are the instruments with which the sublime edifice is reared. The world goes on and the success of to-day should not be the sole contentment of to-morrow; a reason for continual effort. And why should we not be all heart and mind and spirit in this grand, glorious movement? Cæsar took 800 towns and the world was dazzled, but what if I unfetter a captive, if I redeem, save one immortal soul? . . The divine eloquence of the eagle of Meaux, the songs of the swan of the Meander bring less joy to a mother's ears than does that sweet name on the heretofore sealed lips of the child of her bosom. Let you be heartened. Venus gave Galatea life at the instance of Pygmalion. Our work is arduous, but the recompense shall not be beneath Him who dispenses rewards in the eternal mansions.

As sorrow brings friends together, so often do joys. At this particular time we know not of a land that has greater reason to entertain thoughts of thankfulness and tenderest pleasure than this broad American soil and its host of noble schools. Geographically, we may be two peoples. In aim and heart, we are one, whilst in proud results we fain stand peerless!

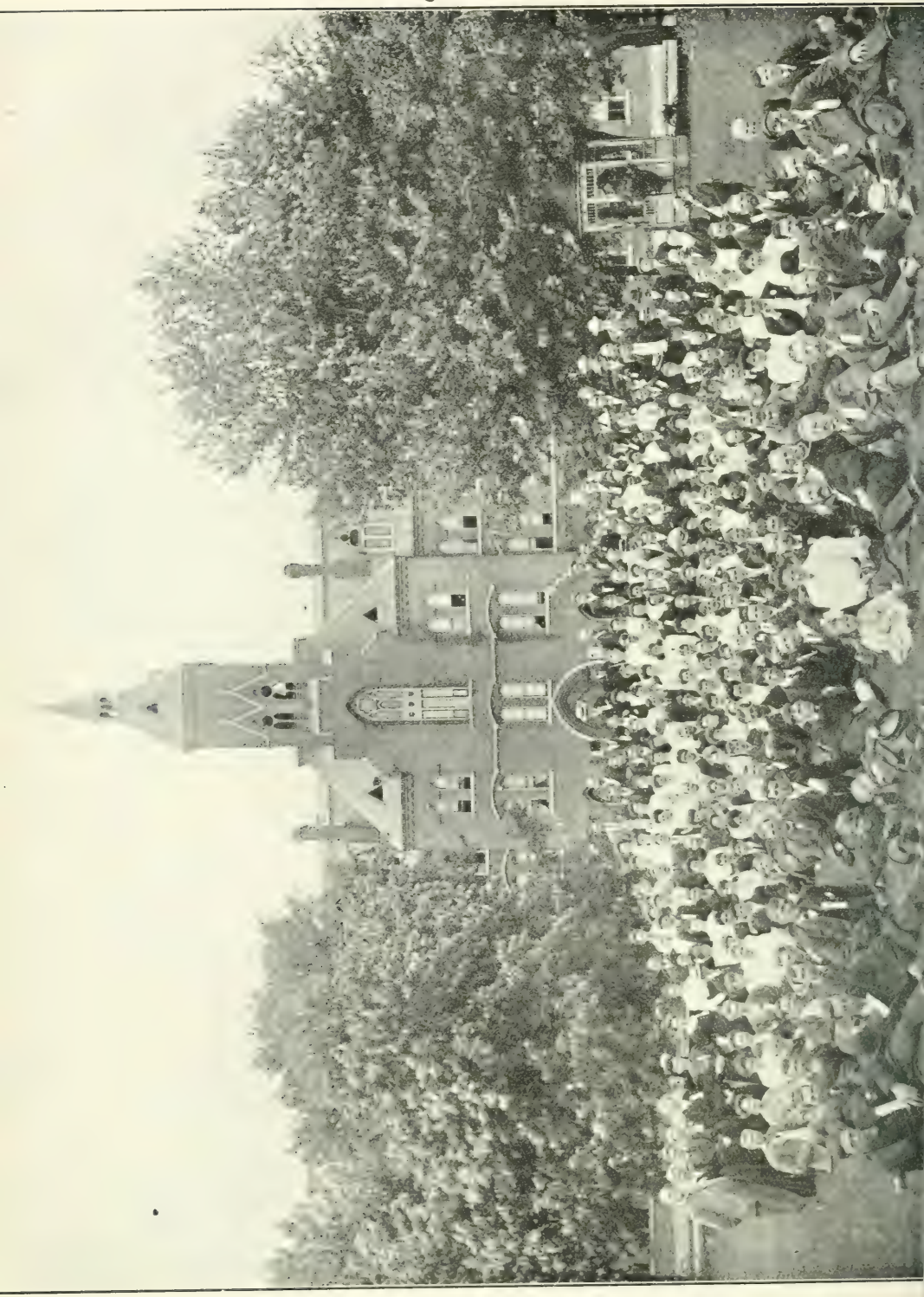
INTELLECTUAL, MORAL AND RELIGIOUS WORK AMONG THE DEAF.

The educated deaf as a class are perhaps of a higher moral standing than hearing people, due not to any natural or inherent superiority, but to the fact that they are less subject to temptation to wrong-doing because of their physical infirmity. They are also more susceptible to religious influences than hearing people, and more amenable to appeals to their sense of right and wrong. In some of the larger cities of the Province the deaf have regular religious services the same as do hearing people. Toronto, however, is the intellectual and religious centre for the deaf, from which radiates helpful and stimulating influences to all parts of Ontario. There they have their established places of worship, and from these a trained band of workers visit in turn various other cities and towns in Western Ontario and conduct religious services according to a carefully prepared itinerary, and for which they receive nothing but their expenses. But scattered about the Province on farms or in villages are a large number of deaf persons who are to a great extent isolated from others of their class, and who very rarely have an opportunity of attending a religious service conducted in their own language of signs. This is a loss and a deprivation such as very few hearing people can properly appreciate; and hence the prominence given to religious addresses and exercises at all their conventions and other gatherings. In addition to the regular Sunday services referred to above, a Bible conference is held in Toronto for four or five days every winter. This is attended by from one to two hundred people from all parts of the Province, and exercises a strong and beneficent influence in promoting religious knowledge and moral and spiritual development among the deaf. It is in contemplation among the deaf in Ontario to engage a regularly ordained itinerant missionary who could devote his whole time to religious work, and it is to be hoped that ere long they will be able to see their way to the accomplishment of this laudable desire.

In addition to the religious work which I have outlined above, the lady members of the deaf-mute community in Toronto have a successful Dorcas Society, where a great deal of work is done for the aid of poor persons. There are also in that city two excellent literary societies, which meet regularly throughout the winter season. These are largely attended and the members are enthusiastic in promoting their own and each other's intellectual advancement. At these meetings regular courses of study in history, science and literature are conducted, of which extended reports are published from time to time for the benefit of the deaf who live in other parts of the Province and are of necessity deprived of the advantages of such interesting and stimulating means of self-culture.

THE ONTARIO DEAF-MUTE ASSOCIATION.

It was in the year 1886—just twenty years ago—that the Ontario Deaf-Mute Association was first organized, chiefly through the efforts of the late Prof. S. T. Greene and of Mr. Wm. Nurse, still of our staff; and during that time regular biennial conventions have been held in various parts of the Province. These gatherings have been steadily increasing in interest and popularity, so that of each convention in succession it could be truly said that it was the best one yet held in the history of the Association. The deaf of the Province are to be congratulated on the loyalty with which they have



CONVENTION OF GRADUATES HELD AT THE INSTITUTION, JUNE, 1906.

stood by the organization, the uniform harmony and good will which have always characterized its proceedings and the commendable *esprit de corps* which has been manifested in all their relations with one another. The great pleasure and undoubted benefit received by those attending those gatherings is ample justification of the wisdom and foresight of its organization.

The Tenth Biennial Convention of the Association was held at the Institution on June 16th to 19th, pursuant to the invitation so kindly extended by you as Minister of Education for the Province, and in attendance and enjoyableness it surpassed all its predecessors. The following named deaf-mute graduates and old pupils, with a few others who have settled in the Province, were in attendance, and the avocations in which they are engaged are herewith noted:—

Artists:
Elliott, C. A.,.....
Mason, A. W...,.....
'Neil, Mary .....Toronto.
Wood, N.....Hamilton.
Brass Finishers:
Crough, J. E.....Peterboro.
Ensminger, R.....Hamilton.
Bakers:
Crozier, F .....
Delaney, Jas.....Ottawa.
Book-Binders:
Perry, F. R.....Toronto.
Carriage-Makers:
Willis, R. W.....Orillia.
Lowes, G. C. .....Cedar Springs.
Carpenters and Cabinet Makers:
Riddle, R. R.....
Wheeler, F. J.....Toronto.
Gardeners:
Gardiner, D. M. .....Mount Forest.
Dressmakers:
Beatty, D. G.....Melrose.
Butler, A. .....Belleville.
Cunningham, N.....Oakville.
Farmers:
Bayne, D.....City View.
Canard, W.....New Hamburg.
Dand, W. T.....Ladybank.
Dean, J.....Sandhill.
Gies, A.....Zurich.
Grey, A .....City View.
King, J.....
King, Wm.....Bird's Creek.
Laporte, L. .....Drysdale.
Moore, G. H.....Forest.
McKenzie, A.....Tavestock.
McQuigge, W.....Blairton.
Noonan, M .....Harper.
Noyes, A.....Denfield.
Orr, J. P. .....Milverton.
Pringle, M .....Staffa.
Perry, A.....New Durham.
Pincombe, J.....Poplar Hill.
Quinlan, W. P.....Stratford.
Scissons, R.....South March.
Young, J. C .....Madoc.
Young, Arthur.....Madoc.
Fleming, D. W.....Craigleith.
Housekeepers:
Campbell, Mrs. S .....Caldwell's Mills.
Grey, Mrs. E .....City View.
Gottlieb, Mrs. H.....Hamilton.

Housekeepers:—*Contd.*
Gould, Mrs. J. S.....Deseronto.
Johnson, Mrs. W. S...Barrie.
Middleton, Mrs. T ....Conover.
Mason, Mrs. J. H.....Toronto.
Moore, Mrs. H.....Toronto.
McLaren, Mrs. C.....Raglan.
McQuigge, Mrs. W....Blairton.
Noyes, Mrs. Jno.....Denfield.
Ormiston, Mrs. J. J ..Raglan.
O'Rourke, Mrs. W....Peterboro.
Pettiford, Mrs. C .....Toronto.
Pincombe, Mrs. C.....Poplar Hill.
Wilson, Mrs. C.....Toronto.
Waggoner, Mrs. A. S..Hamilton,
Allen, Miss E.V .....Montreal.
Branscombe, Miss F...Colborne.
Burke, Miss J .....Toronto.
Bothwick, Miss M ....Ottawa.
Elliott, Miss E.....Toronto.
Fairburn, Miss G .....Windsor.
Gray, Miss V.....Minden.
Hammell, Miss H.....Brantford.
Holt, Miss G .....Ottawa.
Justus, Miss, M.....Bobcaygeon.
Kennedy, Miss M.....Kingston.
McGillivary, Miss M..Purpleville.
Noonan, Miss E.....Harper.
Noonan, Miss M .....Harper.
Pilling, Miss G.....Peterboro.
Rutherford, Miss E ...Belleville.
Rielly, Miss M.....Pembroke.
Ralph, Miss C.....Lansdowne.
Rae, Miss M.....Fergus.
Sager, Miss H.....Napanee.
Sager, Miss B.....Napanee.
Swayze, Miss E.....Tillsonburg.
Spooner, Miss L.....Kingston.
Schwartzentruber,
Miss K. .....New Hamburg.
Mill and Factory Workers:
Barnard, F .....Tillsonburg.
Carson, H .....Burlington.
Clements, H.....Galt.
Cullen, A.....Hamilton.
Gould, J. S.....Deseronto.
Grant, H.....Hamilton.
Hartwick, Jas.....Napanee.
Moore, R. A.....Toronto.
McRae, M.....Cannington.
McGillivary, N .....Toronto.
McMaster, R. W.....Wiarton.
Pierce, C .....Hamilton.

Mill and Factory Workers:—Contd.

Randall, R. ..... Paris.
Smith, M. ..... Acton.
Sours, D. ..... Clinton.
Thackaberry, W. ..... Braeside.
Woods, B ..... Toronto.
Yack, L. ..... New Hamburg.
Young, G. S. ..... Toronto.

Machinists:

Mason, J. H ..... Toronto.

Moulders:

Pettiford, C. ..... Toronto.

Post-Office Employees:

Grooms, H. ..... Toronto.
Gordon, D. G. ..... Toronto.
Henault, H. ..... Ottawa.
Jaffray, A. H ..... Toronto.
Lobsinger, A ..... Toronto.
McKay, Wm. ..... Toronto.
Quick, A. R ..... Hamilton.
Roberts, H. ..... Toronto.
Tirrell, F. W. ..... Toronto.

Pattern-makers:

O'Neil, Jas. ..... Hamilton.

Printers:

Crowder, V. ..... Ottawa.
Lawson, E. A. ..... Peterboro.
McIntosh, A. A. ..... Toronto.
O'Rourke, W. ..... Peterboro.
Pickard, W. C. .....
Reeves, Geo ..... Toronto.

Painters:

Allen, P. ..... Toronto.
Boulding, G ..... Mount Forest.
Hagan, W. ..... Berlin.
Harmer, F. ..... New Hamburg.
Ryan, Chas. ..... Woodstock.
Staley, Con. ..... St. Williams.
Thompson, S. ..... London.

Shoe and Harness-Makers:

Charbonneau, L. ..... Cartwright, Man.
Chantler, Jas ..... Woodstock.
Fraser, P .....
Flynn, J. ..... Toronto.
Gould, W. H ..... London.
Hazelton, T. ..... Delta.
McIsaac, J. ..... Toronto.
Nahrgang, A. ..... New Hamburg.
O'Neil, N .....
Kelly, Jas .....
Rooney, T. ..... Toronto.
Smith, A ..... Morrisburg.
Taylor, J. T. ..... Singhampton.
Waggoner, A. S. ..... Hamilton.

Teachers:

Bull, Miss M .....
James, Miss A. .....
Johnson, Miss A. ..... Belleville.

Typewriters:

Kay, W ..... Saginaw.
Waters M ..... Toronto.

Present at Convention, but not ex-Pupils:

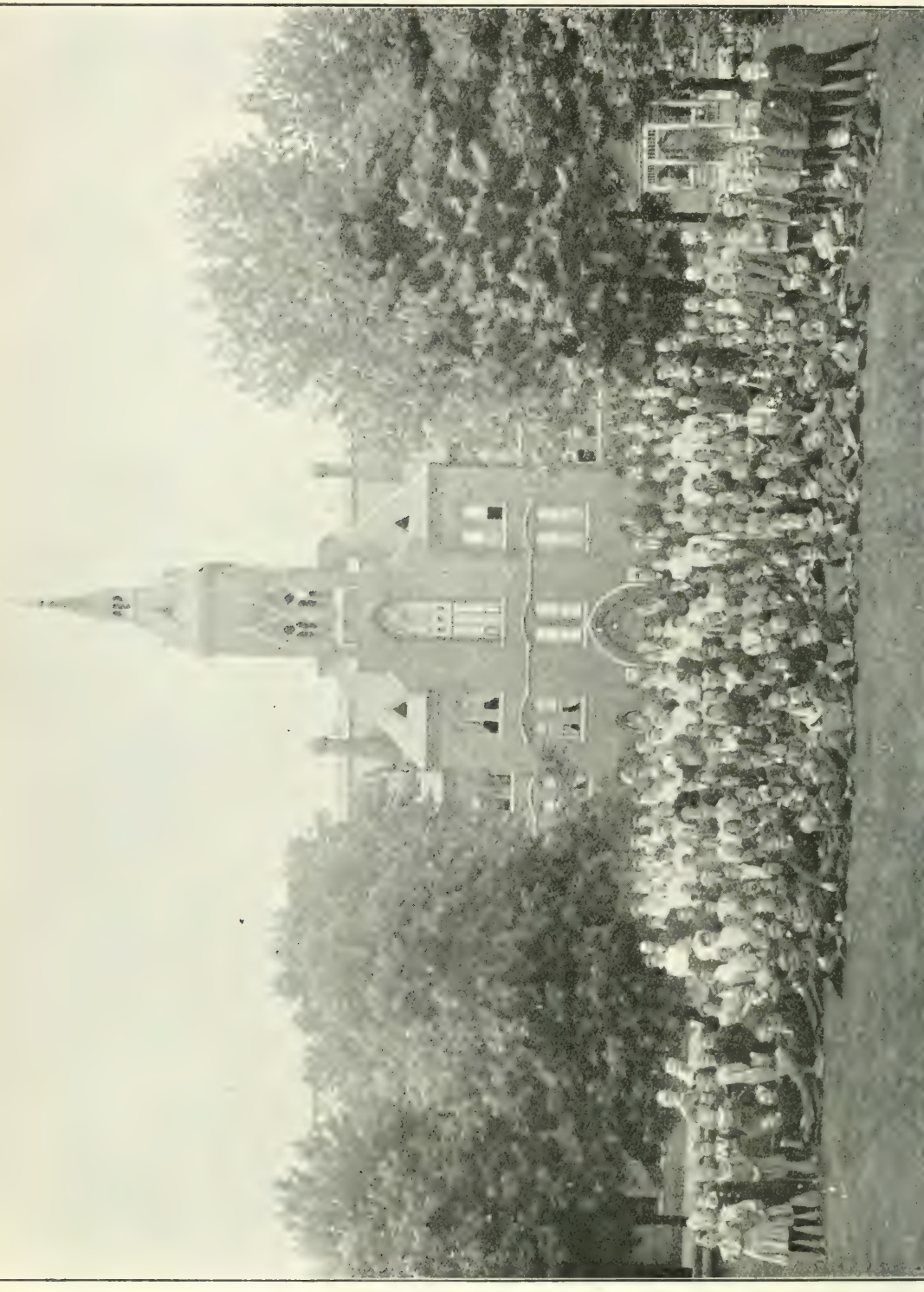
Burns, I. V.	Cobden.	Housekeeper.
Clements, N.	Toronto,	Cigarmaker.
Emery, Mrs. M	Peterboro.	Housekeeper.
Grey, Mary	City View	Housekeeper.
Hayes, W.	Peterboro.	Brass-finisher.
Hambly, D.	Nobleton	Farmer;
Last, Laura,	Ottawa	Housekeeper.
Moore, Mrs. B.	Toronto	Housekeeper.
McRrae, R. W. R	Kingston	Merchant.
McGregor, Mrs. P	Almonte	Housekeeper.
Riddle, Mrs. R	Toronto	Housekeeper.
Reynolds, J. P.	Clinton	Farmer.
Sheehan, D.	Peterboro.	Laborer.
Smith, W. W.	Lanark	Cabinet-maker.
Slater, R. C.	Toronto	Printer.
Smith, Mrs. J. L.	Toronto	Housekeeper.
Thompson, F. J.	Brampton	Shoemaker.
Tirrell, Mrs. J. W.	Toronto	Housekeeper.
Willis, Mrs. R. W.	Orillia	Housekeeper.
Walker, J. C.	Toronto	Draftsman.

Unclassified:

Newton, Jos.	Delta	Stableman.
Cunningham, Miss M	Oakville	Supervisor of Girls, McKay Institute.
Shilton, J. T.	Toronto	Student.

Every respectable deaf person residing in Ontario is eligible to membership in the Association, and is entitled to attend the convention, and on this occasion some two hundred, from all parts of the Province, assembled at their *alma mater*, where they spent three or four days of rare pleasure and profit. (See photogravure of the assemblage.)

The opening address of the retiring President, Mr. R. C. Slater, of Toronto, so well sets forth the aims and purposes of the convention that I take the liberty of making a few extracts therefrom. After expressing the gratification felt by the deaf because of the transference of the Institution to the Department of Education, and briefly sketching the history of the Association, he continued as follows: "The object of the Convention is to bring together all deaf-mutes of suitable age and intelligence, afford opportunities for consultation on all matters of interest to them and otherwise provide means for the promotion of the moral and intellectual well-being of those concerned. All admit that it is impossible for deaf-mutes, no matter how intelligent, to make mental progress and keep alive the spirit of ambition kindled at school without mutual assistance and sympathy. . . . None, perhaps, are in a situation to realize so vividly as the deaf-mutes must do the truth of the wise man's words, 'As iron sharpeneth iron, so doth a man the countenance of his friend.' None, indeed, I conceive, need more the mental stimulus that these meetings are calculated to give, and I trust that each succeeding Convention will show a more lively interest taken by the deaf at large in our biennial gatherings. All who are assembled here will, I am sure, join in deep and grateful appreciation of the blessings conferred by the educational training of the Institution—it can in no way be exaggerated. To all of us it has been the gift of a new and higher life. The difference in mental position between an adult deaf-mute who has never had the inestimable advantage of the training of the Institution and one who has early been brought under its beneficial influence, is almost as great as that between civilized and uncivilized races, though in mechanical aptitude there may be no such strongly marked distinction. We who are best able to appreciate the irreparable loss inflicted by the lack of early training should on all occasions urge on all within the sphere of our influence the solemn duty of seeing that deaf children are at the earliest age practicable sent to the beneficent nurture of the Institution. There is one point more which I wish to refer to before closing. That is the just pride which we deaf people as a class may take in the independent position which the great mass of us have attained to. We are not burdens on society, which some might argue as a necessity of our position, but on the contrary the deaf as a body are successful wage-earners, gaining the respect and approbation of the community. The wandering pedlar, making assumed or real affliction a plea for the purchase of useless goods, was never a representative figure amongst us, and though at one time we had with regret to hear of such caricatures of the deaf-mute community, we are now glad to believe that they have become all but extinct amongst us. Of some of our community we may well be proud. In capacity, character and success they hold their own in the world and are bright instances of what industry and energy can accomplish, however heavily handicapped. Finally, I would impress on all deaf-mutes the binding strength of the tie that unites us together, a common affliction that should be a common bond of union and promote kindly consideration for one another."



OFFICERS, TEACHERS, AND PUPILS, JUNE, 1906.

The Sunday services were of a very interesting and helpful character. The programme for the day will suffice to indicate their scope and character. The subjects of the various addresses were: "The Transfiguration of Christ," "The Second Coming of Christ," I. Peter, 3: 18, "The Spirit of the Age," "The Plan of Salvation." During the day the following hymns were beautifully rendered by a number of deaf ladies in the graceful and impressive sign language: "The Pilot Song," "Weeping will not save me," "Jesus, Tender Shepherd," "All Hail the Power of Jesus' Name," "I Shall Know Him," "Throw Out the Life Line," "Safe in the Arms of Jesus." Other addresses delivered during the Convention were: "Thought and Toil," "The Pursuit of Happiness," "Some Reminiscences of the Early Days of the Institution," and "Overcoming Obstacles." With an extract from the last address I will conclude: "Intelligent and judicious persistence will accomplish almost anything in this world. It will succeed equally well in peace or war, in love, politics or business. Blessed is the man who does not know when he is beaten, for he will succeed in ninety-nine cases out of a hundred. . . . Nothing much has ever been accomplished in this world without persistence. The man who never lets up will most certainly bring things to an end as he wants them, unless Providence intervenes. Intelligence is valuable; knowledge is one of the greatest aids to success. Character is a splendid asset, and stands for you when all other things may fail you. But all these often fail when dogged, unswerving and determined persistence wins."

LITERARY EXAMINER'S REPORT, 1906.

Hon. Dr. R. A. Pyne, Minister of Education, Toronto, Ont.:

Sir,—As Examiner of the Literary Classes of the Deaf and Dumb Institution, at Belleville, for the year 1906, I have the honor to report as follows:—

Articulation Classes.

(a) Miss Gibson's Room.

There are thirty-three (33) pupils in six (6) grades or classes, with a Course of Study as follows:—

Class 1.—Vowels and consonants, single and in combination. Numbers to ten. A few simple actions. Names of classmates and teacher.

Class 2.—Articulation drill. Names of days, months and seasons. Names of people. Action work. Lord's prayer.

Class 3.—Articulation drill. Reading "From Far and Near." Nursery rhymes. Action work. Numbers in the hundreds.

Class 4.—Articulation drill. Journal work. Action work. Simple stories from lip-reading.

Class 5.—Articulation drill. News items from lip-reading. Stories from lip-reading. Conversation. Mental arithmetic.

Class 6.—Articulation drill. Advanced story work from lip-reading. Advanced journal work from lip-reading. Conversation.

(b) Miss Cross' Room.

Miss Cross has charge of thirty-two (32) pupils also on six (6) grades or classes, with a Course of Study as follows:—

Class 1.—Elements of sound and combinations. Numbers to twelve. Commands. Names of common things.

Class 2.—Lip-reading of easy words. Names of classmates and teacher Coins. Days of the week. Actions with a ball.

Class 3.—Drill on vowels. Lord's prayer. Months and seasons. Numeration to 1,000. Easy questions. Reading from charts.

Class 4.—Word-building. Mental addition and subtraction. Commands and actions. Hidden objects.

Class 5.—Dictation of words. Ask and tell. Geography. Arithmetic

Class 6.—Comparisons and opposites of adjectives. Stories. Arithmetic. Geography.

Lip-reading, so important to the mute, has reached a high degree o efficiency in the senior grades of this Institution. Acting on the suggestio of the Superintendent, new work was put to the pupils and questions o current events were asked and readily answered by them. Such question as the following:—

Who won the Marathon race?
In what country was it won?
Where does the winner live?
When did he return home?
When was Victoria Day?
Why do we keep it?
Who lectured in the chapel that day?

Many other sentences were quickly understood from the lips and wer readily answered, thus showing that the pupils keep track of current hap penings. I was much pleased with the work in these classes, and note much improvement from a year ago. All pupils are carefully examine as to their fitness to enter these classes, and those found capable of voic culture and therefore eligible for admission are accepted and placed unde the care of the two above experienced teachers.

Apart from the Articulation classes, the regular class-room work i carried out in thirteen (13) different rooms and by as many teachers. Th classes range from "A" to "M," and the tabulated results herewith ind cate the standing of each pupil:—

CLASS A.—Mr. Coleman, Teacher.

No.	Name.	Age.	No. of Session.	No. of Session in Class.	Mental Arithmetic.	Slate Arithmetic.	Language Forms.	Composition, Letters, etc.	History, Geography, Temperance.	Order.	Writing.	Total
					15	16	28	9	24	4	4	100
1	Barnett, Gerald.....	16	9	1	10	13	26	9	23	4	3	88
2	Berthiaume, Marilda.	19	8	1	13	16	25	8	22	4	3	91
3	Cole, Amos.....	20	10	1	9	2	3	4	6	3	2	29
4	Duke, Ettie	21	11	1	2	6	5	5	8	4	3	32
5	Greene, Minnie.....	16	9	1	13	11	26	8	16	4	4	82
6	Hughes, Myrtle.....	14	7	1	15	16	28	9	24	4	4	100
7	McGregor, Ruby.....	15	8	1	15	16	28	9	24	4	4	100

CLASS B.—Mr. Denys, Teacher.

No.	Name.	Age.	No. of Session.	No. of Session in Class.	Geography and Canadian History. 20	Natural History. 10	Mental and written Arithmetic. 10	Incorporation and Temperance. 20	Letter Writing. 10	General Conversation. 20	Neatness and Order. 10	Total. 100
1	Buchan, Alexander	14	7	1	4+5	6	5+4	8+5	8	14	6	65
2	Cratchley, Mabel	16	7	1	10+7	10	4+4	10+9	9	19	8	90
3	Clark, Adeline	17	9	1	4+6	9	3+4	10+4	9	14	6	69
4	Depew, Georgie	19	6	1	4+4	5	2+1	10+5	8	10	5	54
5	Gummo, Gertie	16	9	1	7+5	7	3+4	10+4	9	14	7	70
6	Gordon, Mary	14	7	1	8+7	10	4+4	10+8	9	18	7	85
7	Green, Mary	14	7	1	8+8	9	3+5	10+5	9	18	8	83
8	Gleadow, Norman	14	8	1	8+7	10	5+5	9+5	9	17	8	83
9	Hazlitt, William	14	7	1	10+8	8	4+5	9+5	9	17	8	83
10	Johnson, William	14	7	1	7+7	10	4+4	10+7	9	16	8	82
11	Lacombe, Joseph	19	7	1	5+5	7	5+5	3+2	8	14	5	59
12	Maas, Anna	15	8	1	9+9	9	3+5	10+9	9	19	8	90
13	Penprase, Ruth	16	8	1	7+6	8	4+4	8+5	9	14	8	73
14	Petrimoulx, George	15	7	1	9+5	9	4+5	9+6	9	19	8	83
15	Sipe, Thomas	15	7	1	7+5	7	5+5	10+5	8	17	8	77
16	Tudhope, Laura	16	10	1	5+5	7	4+5	9+5	9	16	8	73
17	Walter, John T.	15	9	1	10+9	9	3+5	9+8	9	18	8	90

CLASS C.—Mr. Balis, Teacher.

No.	Name.	Age.	No. of Session.	No. of Session in Class.	Mental Arithmetic. 10	Practical Arithmetic. 10	Grammatical Exercises. 20	Miscellaneous Language Ex. 20	Composition. 20	Order Management. 10	Writing. 10	Total. 100
1	Boomer, Duncan	18	10	2	5	4	14	5	8	10	5	61
2	Burk, Elsie	14	8	1	9	6	12	11	12	5	5	60
3	Chaine, Joseph	15	8	1	3	5	8	6	10	3	3	38
4	Chestnut, Arlie	13	7	1	10	9	14	13	15	10	10	81
5	Croucher, John	20	11	1								
6	Cunningham, Martha	17	11	1	4	4	12	12	16	10	6	64
7	Elliott, George	16	6	1	10	10	14	17	15	6	6	78
8	Franklin, Sara	14	5	1	10	9	15	14	16	10	10	84
9	Harper, Marion	15	4	1	8	9	15	11	15	8	8	74
10	Hoare, Ethel	15	8	1	9	7	16	8	20	5	8	73
11	Hough, Ethel	14	7	1	10	6	14	17	13	5	8	73
12	Hustwayte, Franz	16	8	1	9	7	14	16	15	8	10	79
13	Ireland, Louis	17	10	1	6	4	12	10	12	6	3	53
14	McCready, Aletha	15	8	1	9	6	13	13	20	8	8	77
15	McCaul, Alex	18	5	1	7	6	16	15	16	10	5	75
16	Parent, Sophia	17	8	1	6	3	12	12	15	6	5	59
17	Scott, William	14	3	1	10	6	16	14	16	5	10	77
18	Veitch, Elizabeth	17	10	2	9	7	13	17	15	10	10	81

CLASS D.—Miss Templeton, Teacher.

No.	Name.	Age.	No. of Session.	No. of Session in Class.	Mental Arithmetic.	Slate Arithmetic.	Geography.	Miscellaneous Questions.	Language.	Grammatical Exercises.	Time Lesson.	Total.
					10	10	10	10	30	20	10	100
1	Brooks, Effa	13	6	1	10	10	9	9	23	19	9	89
2	Brown, Daisy	16	8	1	10	9	9	7	18	18	8	79
3	Brown, Fred	13	7	1	10	8	10	8	16	17	8	77
4	Bowman, Ellsworth	13	6	1	10	9	9	8	22	18	8	84
5	Carter, Stella	17	10	1	7	9	9	7	17	13	7	69
6	Dalgleish, Elizabeth	13	6	1	10	9	10	8	18	17	8	80
7	Ensminger, Maggie	14	8	1	7	8	6	6	18	11	6	62
8	Fishbein, Sophia	12	7	1	9	10	9	8	21	18	10	85
9	Gannon, Ellen	16	4	1	10	9	9	7	19	18	8	80
10	Gibson, Winnie	16	8	1	5	7	8	6	15	12	9	62
11	Greene, Thomas	13	7	1	10	10	10	9	21	18	9	87
12	Herman, Pearl	14	7	1	8	8	9	9	21	18	9	82
13	Jewell, Ena	14	8	1	8	9	8	6	18	16	8	73
14	Yager, Nettie	13	6	1	10	10	9	8	22	18	10	87
15	Young, Fred	13	6	1	10	9	9	8	20	17	10	83
16	Zimmerman, Candace	16	7	1	10	10	10	9	23	19	10	91

CLASS E.—Mr. Campbell, Teacher.

No.	Name.	Age.	No. of Session.	No. of Session in Class.	Mental Arithmetic.	Written Arithmetic.	Incorporation.	Miscellaneous Language Exercises and Artisans.	Asking Questions and Geography.	News, the Lord's Prayer, Pictures.	Writing and Order.	Total.
					10	10	20	20	20	10	10	100
1	Aldcorn, Barbara	15	8	1	6	6	17	13	16	7	7	72
2	Bain, Josephine	18	5	1	10	8	16	16	16	8	6	80
3	Boyle, Mary T.	14	7	1	10	9	17	17	16	8	6	83
4	Brown, Florence	14	7	1	10	9	17	18	18	9	6	87
5	Charliebois, Walter	13	6	1	10	8	15	16	17	7	5	78
6	Cole, Rose	13	5	1	10	7	17	15	16	7	5	77
7	Courneya, Addie	19	6	1	9	7	17	17	17	8	6	81
8	Etherington, Mabel	14	1	1	0	0	10	7	8	3	5	33
9	Garner, Esther E	19	7	2	3	1	17	15	16	7	7	66
10	Graham, Victor	13	7	1	10	9	17	17	18	8	6	85
11	Mason, Myrtle	13	5	1	8	5	18	17	15	8	5	76
12	McLaren, George D.	13	5	1	9	9	18	18	18	9	7	88
13	Noble, Edgar	13	6	1	6	7	16	13	13	6	6	67
14	Robertson, Stewart	17	4	1	9	9	14	17	16	9	7	81
15	Stevens, Grace	13	1	1	7	9	19	19	19	9	7	89
16	Young, Clara	16	8	1	0	0	10	8	5	4	5	32
17	Zinke, Charles	19	6	1	4	4	11	6	5	5	5	40

CLASS F.—Mr. Stewart, Teacher.

No.	Name.	Age.	No. of Session.	No. of Session in Class.	Mental Arithmetic. 10	Written Arithmetic. 10	Incorporation. 20	Miscellaneous Language Exercises and Artisans. 20	Asking Questions and Geography. 20	News, Lord's Prayer, Picture Description. 10	Writing and Order. 10	Total. 100
1	Anderson, Harvey....	16	4	1	6	7	15	15	15	7	6	71
2	Barclay, Helen	13	5	1	7	7	14	15	15	7	7	72
3	Best, Olive	14	5	1	7	7	16	16	16	8	7	77
4	Buller, Henry.....	14	3	1	8	8	13	13	13	6	6	67
5	Burley, Willie	13	3	1	3	3	8	8	10	5	7	44
6	Courscey, Viola.....	15	6	1	7	7	10	10	10	5	6	55
7	Curtis, Lillian.....	14	5	1	8	8	18	18	18	9	9	88
8	Goetz, Gregory	18	3	1	8	8	17	16	17	9	9	84
9	Hartley, Clara	12	5	1	6	6	14	14	14	6	7	67
10	Hughes, Iva	12	5	1	7	7	15	15	15	8	7	74
11	Johnston, Bertha	16	6	1	8	8	18	18	18	8	9	87
12	Komph, Spray.....	14	5	1	7	7	14	14	14	8	7	71
13	Kraemer, Johana	17	6	1	7	8	18	18	18	9	9	87
14	McFarlane, Mona....	12	5	1	8	8	18	18	18	9	9	88
15	MacLachlan, Willie..	16	5	1	9	9	14	14	15	8	7	76
16	Nelson, Ethel.....	13	6	1	6	7	16	16	16	8	7	76
17	Wilson, Arthur.....	12	5	1	8	7	14	14	14	6	7	70

CLASS G.—Miss Linn, Teacher.

No.	Name.	Age.	No. of Session.	No. of Session in Class.	Mental Arithmetic. 10	Written Arithmetic. 10	Language. 30	Questions. 20	Miscellaneous. 20	Writing and Arrangement. 10	Total. 100
1	Carpenter, Lena.....	12	5	1	9	9	28	18	16	9	89
2	Cherry, Ida	16	4	1	7	8	16	14	14	6	65
3	Chevalier, William...	21	4	1	8	6	21	9	7	4	55
4	Derochie, Caroline...	20	4	1	2	5	11	.....	.....	4	22
5	Dierks, Caroline	14	6	1	10	9	24	14	14	7	78
5	Eastman, Alma	13	4	1	7	9	28	18	19	8	89
6	Ellis, Wesley E.	13	4	1	10	10	27	19	19	9	94
7	Fretz, Cora	17	2	1	8	7	9	.....	5	5	34
8	Kennaley, Winnifred.	11	4 1/12	1/12	Went home December 22nd.						
9	Lawson, Violet	13	4	1	10	10	28	16	19	10	93
10	O'Brien, Gerald	12	4 1/2	1	10	10	29	19	20	9	97
11	Pipher, Celia	12	4	1	9	9	28	18	19	10	93
12	Russell, Alice.....	17	4	1	9	10	28	18	18	6	89
13	Smith, William.....	14	5	1	8	8	23	12	13	6	70
14	Thompson, Arthur...	11	4	1	3	5	10	.....	7	4	29
15	Weiler, Diana.....	14	5	1	10	9	27	17	19	7	89
16											

CLASS H.—Mrs. Terrill, Teacher.

No.	Name.	Age.	No. of Session.	No. of Session in Class.	Nouns, Plurals.	Adjectives, Actions.	Incorporation.	Miscellaneous Writing.	Arithmetic, Colors.	Notation, Answers to Questions.	Total.
					25	20	10	15	15	15	100
1	Breault, Gertie.....	18	5	2	15	15	10	12	12	10	74
2	Blake, Frederick.....	13	2	1	15	16	8	0	4	12	55
3	Dorschner, Charles...	9	3	1	15	15	8	10	10	10	68
4	Fountain, Farley.....	9	4	1	15	15	5	0	12	13	60
5	Jennings, Frank	8	2	1	15	12	0	0	5	8	40
6	Lorentz, Mary.....	16	4	1	20	15	8	10	12	12	77
7	Morton, Floyd.....	11	1	1	12	12	8	5	5	8	50
8	Parker, Beatrice.....	15	5	1	15	15	10	12	12	12	76
9	Shepley, May.....	18	3	3	16	16	10	12	12	12	78
10	Schwalm, Mary.....	14	4	2	20	18	10	5	5	12	70
11	Sheckleton, Alfred...	16	3	1	15	15	10	8	12	15	75
12	Smith, Percy	10	3	1	20	15	8	8	12	12	75

CLASS I.—Miss Bull, Teacher.

No.	Name.	Age.	No. of Session.	No. of Session in Class.	Mental Arithmetic.	Written Arithmetic.	Miscellaneous.	Questions.	Incorporation.	Writing, Order, and Management.	Total.
					10	10	20	20	30	10	100
1	Bain, Olive.....	13	4	1	10	9	14	16	19	6	74
2	Berthiaume, Dorina..	11	5	1	9	9	16	16	20	5	75
3	Derochie, Clara.....	16	4	1	2	4	15	16	20	4	61
4	Forrester, Harry.....	12	4	1	10	9	18	16	20	6	79
5	Gordon, Annie	11	4	1	10	8	17	17	20	8	80
6	Gibson, Maggie.....	12	4	1	6	6	16	16	18	6	68
7	Meloche, Edmund ...	13	4	1	6	6	14	16	15	6	63
8	Mitchell, Geo. Lloyd.	13	5	1	5	5	15	15	20	7	67
9	McLaren, JohnCharles	11	5	1	9	9	16	16	19	7	76
10	Nelson, Florence.....	14	4	1	10	10	20	20	28	9	97
11	Pollock, Bessie	12	5	1	9	7	18	18	27	10	89
12	Paddison, Thomas ...	13	5	1	9	8	15	15	18	5	70
13	Quigley, Walter.....	14	6	1	9	6	16	16	24	5	76
14	Salmon, Albert V. ...	13	5	1	9	8	16	16	27	7	83
15	Whistle, Mary Jane..	17	3	1	10	10	19	19	29	9	96

CLASS J.—Mr. Forrester, Teacher.

	Name.	Age.	No. of Session.	No. of Session in Class.	Arithmetic, Not Num. Sums. 10	Arithmetic Problems. 10	Actions. 25	Questions. 25	Elliptical Ex., Pictures, etc. 20	Writing and Order. 10	Total. 100
1	Barnett, Winnifred.....	11	4	1	8	7	17	20	16	6	74
2	Berthiaume, Lionel	10	3	1	7	7	17	20	18	6	75
3	Earl, Charles	12	3	1	7	4	15	11	14	6	57
4	Edwards, Mary.....	10	1	1	9	9	20	22	16	6	82
5	Fishbein, Herbert.....	9	3	1	9	7	19	22	18	5	80
6	Fountain, Herbert.....	11	4	1	8	7	18	20	17	6	76
7	Granger, Martha.....	16	5	1	8	7	21	21	16	6	79
8	Hall, Ewart J.....	10	3	1	7	6	19	22	17	5	76
9	Hartwick, Archibald...	10	3½	1	8	6	16	13	15	4	62
0	Huband, Gerald	10	3	1	5	5	16	13	14	4	57
1	Kindree, Earl	10	3	1	6	6	17	19	16	6	70
2	Lawson, Lila.....	9	4	1	5	6	15	18	17	4	65
3	Maitre, James	23	5	1	9	7	19	18	16	6	75
4	Marquardt, Gusgtave...	23	2	1	8	7	15	18	16	7	71
5	McCallum, Chas. Roy..	12	3	1	9	7	20	22	18	6	82
6	Ryan, Chas.....	11	5	1	6	6	22	22	17	7	80
7	Trethewey, Roy Clinton	10	3	1	6	6	21	20	17	5	75

CLASS K.—Mrs. S. C. Balis, Teacher.

	Name.	Age.	No. of Session.	No. of Session in Class.	Action Writing. 20	News and Letters. 20	Questions and Answers. 10	Elliptical Sentences. 10	Miscellaneous. 10	Numbers. 10	Addition and Substraction. 20	Total. 100
1	Barker, Isabella	9	2	1	16	18	8	9	10	10	18	89
2	Buchan, Drusilla.....	9	2	1	18	18	9	9	9	8	13	84
3	Curry, Duncan	12	3	1	10	10	4	5	5	5	12	51
4	Fleet, Ellen.....	10	3	1	15	16	7	7	10	9	10	74
5	Gauvreau, Telesphore	11	2	1	2	2	0	4	2	2	0	12
6	Gerolamy, Marie.....	8	2	1	15	12	6	7	8	9	14	71
7	Hazlitt, Dorothy.....	11	2	1	19	18	9	9	10	10	19	94
8	Hazlitt, Evelyn.....	12	2	1	19	18	9	9	10	10	19	94
9	Holbrook, Agnes L...	14	1	1	10	10	5	7	4	5	8	49
0	Kennedy, Muriel	9	2	1	19	8	9	9	9	8	12	84
	Laugheed, Annie E...	9	2	1	15	15	7	9	7	7	10	70
2	McAdam Wesley.....	11	3	1	18	15	7	8	10	9	18	85
3	Neville, Mamie.....	10	3	1	10	15	6	5	9	6	10	61
	Porter, Annie.....	9	3	1	Left for Manitoba April 10th.							
	Wilson, Janet.....	10	3	1	15	15	8	7	7	8	14	74
	Whitworth, Florence.	10	3	1	19	18	9	9	10	10	15	90
	Windrim, Rita.....	13	1	1	10	14	7	6	7	5	8	57

CLASS L.—Miss James, Teacher.

No.	Name.	Age.	No. of Session.	No. of Session in Class.	Objects. 10	Plurals. 10	Adjectives. 20	Actions. 30	Counting. 10	Miscellaneous. 10	Writing. 10	Total. 100
1	Balkwill, Clara.....	8	1	1	4	3	12	18	8	5	8	58
2	Brown, Lily	8	1	1	2	1	10	6	.....	1	5	25
3	Doubledee, Sara Lena	8	1	1	4	2	12	15	4	2	10	49
4	Golds, Margaret.....	8	1	1	10	10	20	30	10	10	10	100
5	Hamilton, Alma.....	9	2	2	8	7	19	28	9	9	9	89
6	Heaslip, Myrtle O. G	8	1	1	7	6	19	25	4	7	8	76
7	Lloyd, Ruth Gladys..	8	1	1	8	9	20	29	10	9	9	94
8	Marks, Jennie	7	1	1	4	6	14	11	2	3	5	45
9	McDougall, Elsie.....	10	1	1	10	9	20	30	9	10	10	98
10	Peacock, Ada.....	9	2	2	10	9	20	23	10	8	10	90
11	Sours, Gladys.....	8	1	1	10	10	20	29	10	10	10	99
12	Toll, Nova Rose.....	8	1	1	7	8	20	26	10	10	10	91
13	Watson, Muriel	7	1	1	.....	.....	.....	.....	.....	.....	.....	.....

CLASS M.—Mr. Ingram, Teacher.

No.	Name.	Age.	No. of Session.	No. of Session in Class.	Objects. 10	Plurals. 10	Adjectives. 20	Actions. 30	Counting. 10	Miscellaneous. 10	Writing and Order. 10	Total. 100
1	Brigham, Thos. Leo..	7	1	1	8	9	15	26	9	8	8	83
2	Brown, Thos. Herbert	9	1	1	10	9	18	26	10	9	10	92
3	Bruss, Henry	14	1	1	4	7	12	22	9	7	6	67
4	Buchan, John.....	7	1	1	6	8	15	26	5	7	6	77
5	Carefoot, Seymour ...	17	1	1	.....	.....	.....	.....	.....	.....	.....	.....
6	Evoy, Jas.	8	2	1	2	4	6	15	2	1	3	33
7	Forrester, Asa.....	8	1	1	8	9	12	25	7	4	6	71
8	Green, James	8	1	1	9	10	18	28	8	9	9	91
9	Loper, Cyril	9	1	1	4	8	14	23	5	4	5	63
10	Martin, Absalom.....	9	1	1	7	6	15	24	5	8	9	71
11	McDougall, Peter	9	1	1	8	10	19	28	10	8	7	90
12	McMillan, Joseph....	9	1½	1	4	10	15	20	7	5	6	67
13	Paul, Edward Geo....	8	1	1	8	9	14	25	9	5	6	76
14	Penprase, Alfred.....	8	1	1	8	6	14	24	5	4	6	66
15	Smith, Edward Scott.	15	1	1	10	10	19	29	8	9	9	94
16	Walker, Achille.....	10	1	1	6	8	12	24	7	7	7	72

I examined carefully the work done by each and am thoroughly satisfied that every teacher on the staff of this Institution is an honest, conscientious teacher and anxious to accomplish the best results possible. There are, of course, some differences in the vim and vigor with which the teachers do their work, but in a report of this kind to individualize would be invidious. All are above the average.

Other Classes.

In addition to the regular class-room work, the pupils have the benefit of special classes and trade-work, as follows:—

(*a*) *Domestic Science.*—This class is in charge of Miss Gowsell. Here the

MISS ANNETTA JOHNSTON,
Brantford,
Winner of Stratton Gold Medal for General Proficiency, June, 1906.

MISS MARY E. REILLY,
Pembroke.
Winner of Institution Silver Medal for General Proficiency, June, 1906.

MISS VIOLET GRAY,
Gelert.
Winner of Institution Silver Medal in Domestic Science Class, June, 1906.

MR. ALEXANDER LOBSINGER,
Mildmay.
Silver Medalist for Good Conduct, June, 1906.

girls learn to cook and do other work pertaining to the home. They do it well, too. A practical demonstration quieted all my doubts in this respect, and we had a splendid dinner prepared by the pupils of this department. The boys also learn to sew and much of their work is commendable, indeed.

(*b*) *Dressmaking and Millinery.*—The regular Dressmaking and Millinery Department is in charge of Miss Dempsey, and I had the pleasure of looking at a large class of pupils who are now able to make their own dresses and who make dresses for smaller pupils.

(*c*) *Manual Training.*—Mr. Forrester, an expert in manual training, presides over this department. As is usual, the pupils are very much interested in this work. Samples of the work done will compare favorably with that of other schools in Ontario.

(*d*) *Laundry, Printing Office, Shoeshop, Bakery, Carpenter Shop.*—To these add the Laundry, Printing Office, Shoeshop, Carpenter Shop and the Barber Shop—all of which have pupils—and some idea may be formed of the great benefit of the Institution to the pupils in attendance. I made special visits to all these departments and examined the work in detail. Those in charge were courteous, kind and very agreeable to my inspection of their work.

Discipline, Public Health, Pupils, &c.

The discipline throughout the Institution is perfect. There is not apparent the slightest degree of friction. The buildings and grounds are models of neatness. The schoolrooms and dormitories are scrupulously clean. The Hospital in connection has not been used at all during the year, the pupils being free from serious ailments, but the building is fit for use at any minute, so thoroughly in order is it kept by the officer in charge.

The pupils, 212 in number, are orderly, kind to one another, neat and cleanly in appearance and most attentive to their work. They desire to excel and submit to examination with zeal and confidence.

I addressed the graduating class and am satisfied they are leaving this, their Alma Mater, with the proper conceptions of life and are determined to become good and useful citizens.

The work of the Examiner is arduous, but pleasant. The uniformly kind and courteous treatment accorded me by every teacher and officer of the Institution lightened the labor and I commend the Institution to the attention of our public men. There are so few who know of its real worth.

In conclusion, permit me to say that the genial, ever ready and always at hand Superintendent and Principal, Mr. R. Mathison, is as active as ever and absolutely knows and directs the work of the Institution from cellar to attic.

I have the honor to be,
Sir,
Your obedient servant,
(Signed) W. Spankie, M.D.,
Literary Examiner.

Kingston, Ont., June 1, 1906.

SOME FACTS TO THINK ABOUT.

According to recent statistics, there are no less than 615 schools for the deaf in the world. These schools have an attendance of 38,854 pupils, and employ 4,839 teachers, distributed as follows: Africa, seven schools with 16 teachers and 127 pupils; Australia, ten schools with 70 teachers and 669 pupils; Asia, six schools with 23 teachers and 116 pupils; Europe, 450 schools with 3,207 teachers and 11,760 pupils; North America, 135 schools with 1,489

teachers and 11,760 pupils; South America, seven schools with 34 teachers and 229 pupils. Of these 615 schools, 134 are public and 87 are private boarding schools; 144 are public and 19 are private day schools; while 56 public and 34 private schools have both day and boarding pupils. Of these 38,854 pupils, 21,858 are taught exclusively by the combined system, while there is no record concerning methods used with the remaining 16,996. The methods of instruction in the various schools differ as a matter of course, but the following are the principal methods adopted:

(1) The Manual Method.—Signs, the manual alphabet, and writing are the chief means used in the instruction of pupils, and the principal objects aimed at are mental development and facility in the comprehension and use of written language. The degree of relative importance given to these three means varies in the different schools, but it is a difference only in degree, and the end aimed at is the same in all.

(2) The Manual Alphabet Method.—The manual alphabet and writing are the chief means used in the instruction of the pupils, and the principal objects aimed at are the same as in Number 1.

(3) The Oral Method.—Speech and speech reading, together with writing, are made the chief means of instruction.

(4) The Auricular Method.—The hearing of semi-deaf persons is utilized and developed to the greatest possible extent, and, with or without the aid of artificial appliances, their education is carried on chiefly through the use of speech and hearing, together with writing. The aim of this method is to graduate its pupils as hard-of-hearing speaking people instead of deaf-mutes.

(5) The Combined System.—Speech and speech-reading are regarded as very important, but mental development and the acquisition of language are regarded as still more important. It is believed that in many cases mental development and the acquisition of language can be best promoted by the Manual or the Manual Alphabet Method, and as far as circumstances permit, such method is chosen for each pupil as seems adapted for his individual case. Speech and speech-reading are taught where the measure of success seems to justify the labor expended, and in most of the schools, some of the pupils are taught wholly or chiefly by the Oral Method or by the Auricular Method.

In regard to the difficulties attending the education of the deaf, and the onerous duties and responsibilities of the teachers, the *Texas Lone Star* remarks very tersely and truly: "Teachers of the deaf have as many things to worry them, as many anxieties as teachers of the hearing, perhaps more. The peculiar difficulties of their task of reaching minds to which the main avenue is closed impose a constant nervous strain, and a high-strung, nervous person, one who is not thoroughly self-possessed or does not make proper distribution of her time, will sooner or later break down at it. Besides the increased worry, the teacher of deaf children has more outside work in the way of preparing and correcting lessons than the teacher of hearing children. Deaf pupils are much more dependent on their teachers than hearing pupils; they learn less from their associations out of school, their language has to be built up for them largely by the teacher, and their deficiency in language makes it difficult to teach them any of the common English branches taught in the public schools. Then, too, hearing children get a great deal of assistance from their home folks in preparing lessons at night for the next day. In schools for the deaf this work falls upon the

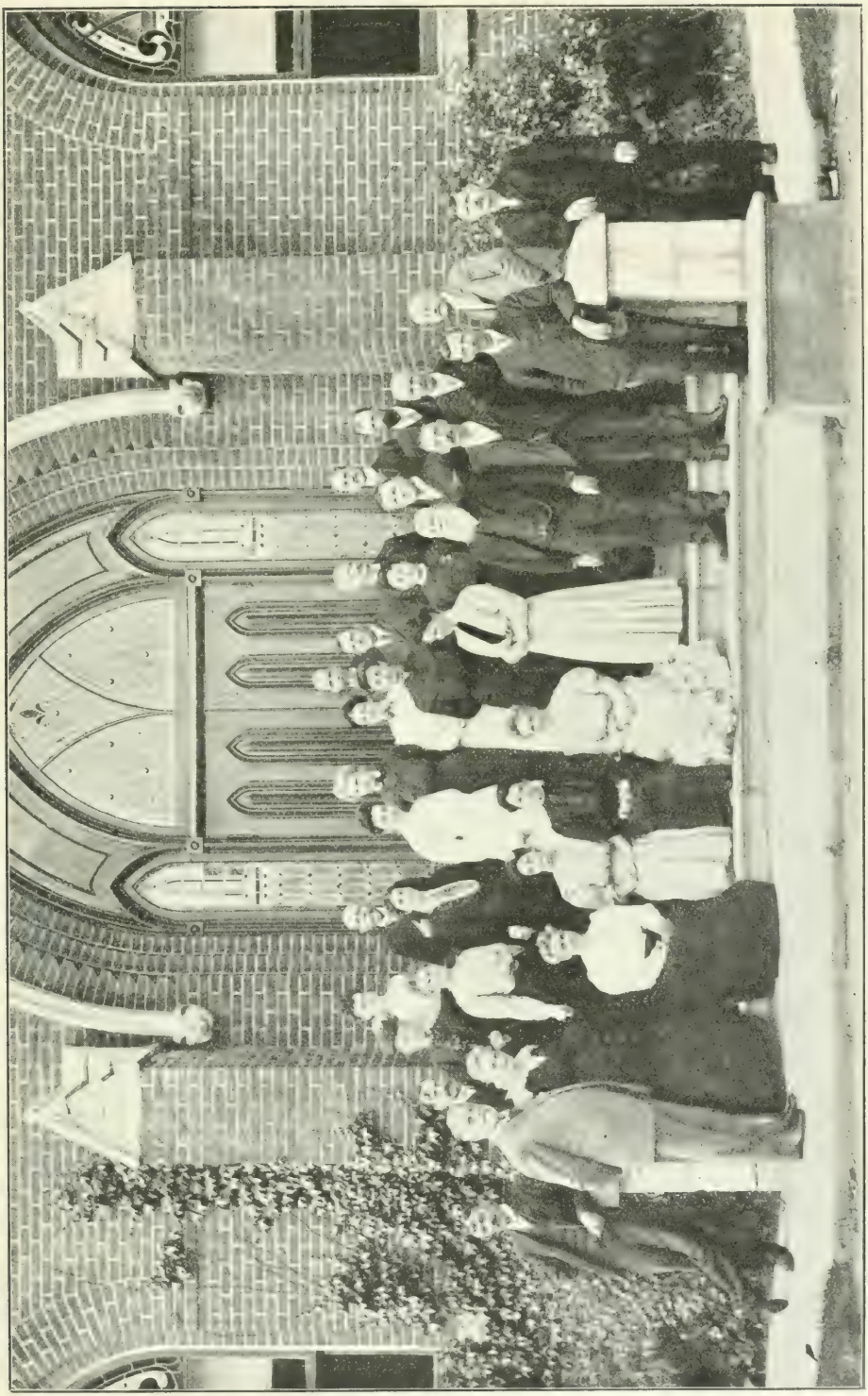
teachers. The conscientious teacher of the deaf is very far from having a 'soft snap.' Able, conscientious teachers are never overpaid for their work. Indeed, it is one of the anomalies in modern social life, that they are almost universally underpaid. There is perhaps no class of people, except ministers of the gospel, who are so poorly paid in proportion to what is required of them. This will always be the case until teachers take steps to better their condition by organized and systematic effort. Labor unions have done much to raise and keep up the remuneration of those engaged in the various industries. Some sort of combined effort on the part of teachers would doubtless result in material good to them. It is true that the teacher's occupation should be largely a labor of love, like that of the ministry, but one cannot live on love alone, and the rest of the world should not selfishly take advantage of this feature in the work of education. We have discussed the subject of the teacher's pay a number of times before, at the risk perhaps of becoming tiresome to some people, but we propose to keep it up."

DEAF-MUTES IN THE POSTAL SERVICE.

Last year a new field of employment was opened up for the deaf in Canada by the wise and generous action of the Post-Office Department of the Dominion in offering a number of situations in the outside service to suitable deaf-mutes capable of filling the places. The initiative in this commendable innovation was taken by Mr. George Ross, Chief Superintendent of the Post Office Department, who for many years manifested a warm interest in the welfare of the deaf; and his suggestion was heartily concurred in by Sir William Mulock, then Postmaster-General, and Dr. R. M. Coulter, Deputy Postmaster-General, and the new policy has been endorsed and continued. This departure was necessarily a tentative one at first, four deaf clerks having been employed in Toronto as an experiment, and so well did they perform their duties, and so pleased were the authorities with their work, that others have been added, and there are now in the Post Offices of the Dominion the following named deaf persons:—

Toronto—A. W. Roberts, Arthur Jaffray, A. C. Shepherd, W. C. Mackay, F. W. Terrell, F. E. Doyle, R. W. McMaster, A. Lobsinger, H. Grooms. *Hamilton*—A. R. Quick. *Ottawa*—D. G. E. Gordon, H. Henault. *Montreal*—Chas. Hart, E. H. Whitehead, A. LaFrance, J. B. Mainville, A. Blache, N. Queensville, J. McPhee, W. Lagace. *Quebec*—J. A. Laberge, J. Gariepy. *St. John*—H. Breen, Wm. McDonald. *Winnipeg*—A. Wright, B. Partridge, H. A. Lonsdale, C. Pettypiece.

Only deaf young men have been selected up to this time, but as hearing and speaking young women occupy places in the service, it is hoped deaf young women, who are fitted for the duties, may have an equal chance of serving the country. This is a kind of work for which the educated deaf are peculiarly well adapted, and in which they should become efficient. The chief requirements are manual dexterity, quick apprehension, scrupulous accuracy, a retentive memory, and a fair amount of education; and in at least four of these qualities the deaf are not wanting. A number of the pupils who have graduated from this and the other Institutions in the Dominion are fully competent to successfully fill these and similar positions; and, moreover, in work of this nature, their very infirmity might almost be said to constitute a special qualification and increase their efficiency, for there is little occasion for communicating with others, and their deafness tends to



OFFICERS AND TEACHERS, JUNE, 1906.

increase their closeness of observation and concentration of attention to the work on hand. It is to be hoped that the new policy thus inaugurated, and which has already passed the experimental stage and been amply justified by results, will soon be greatly extended, and that it will not be long before many of the deaf will be employed, not only in this, but in various other public departments at both Ottawa and Toronto, and that they will soon be accorded a recognized position in the Civil Service of Canada and the various Provinces thereof.

INDUSTRIAL DEPARTMENTS, 1905-1906.

The work in the Industrial Departments during the past year was carried on as usual, and the improvement made was quite noticeable. The reports of those in charge were encouraging and the results all that could be desired or looked for.

Manual Training. Twelve boys received instruction in this department during the past session, and all have benefited by the training afforded. The new pupils admitted in the fall were much smaller than those of previous years, but I am pleased to say the work turned out has lost nothing either in quality or in quantity. One or two show surprising aptitude for the work. Two of the boys, having finished the course in woodwork, received some instruction in carving. The pupils worked well and their conduct was excellent. Language work also forms part of the course.

Domestic Science. During the session thirty-five girls received instructions in this department. The pupils were interested and appreciated the advantages to be derived from this work later in life. Promptness, neatness and accuracy were emphasized.

Class 1. A class of six girls, completed the third year's work, consisting of a review of previous work; lessons in canning and preserving of fruits and vegetables, the making of jelly and marmalade; cooking of fish, fish sauces, poultry, stuffing, gravies and meat sauces; preparing hot and cold desserts, pudding sauces, frozen dishes, confections, baking powder mixtures, pastry, salads, sandwiches; cooking of seasonable dishes; planning of meals, cooking and serving the same, planning and preparing of meals for the sick; also, some valuable information on home-nursing was given. The linens in the dining-room were cared for by the pupils.

Class 2. A class of nine girls, reviewed the previous year's work and received instructions in bread-making, cooking of meats, preparing made-over dishes, soup-making, the making of a few salads, and the cooking of seasonable dishes. Simple house-work was taught, the pupils being responsible for the order of the rooms. Practice work in the serving of meals was given after the necessary instructions.

Sewing Class—Boys. This class sewed for one hour each week, the aim being first to teach the various stitch forms and darning. After a thorough knowledge of these were gained, their coats and vests were mended when necessary. Order and neatness were encouraged.

Sewing Class—Girls. The girls of the Sewing Class have been very attentive and showed excellent progress, so much so that eight of them, prior to going home, fitted and made their dresses, which were given them by the Institution for prizes. Those who graduated from this class are quite prepared to make a living by their needle outside.

The boys in the Shoeshop showed an improvement on former sessions in the character of the work done. Although there were not so many engaged, they were able to do about the same amount of new work and considerably more repairing than in former years. They applied themselves faithfully to their duties, and two of them who did not return are now working in the western part of the Province and making a good living.

A couple of boys who were in the Carpenter Shop last year are now employed near Toronto and are doing well, receiving as much pay for their labor as hearing and speaking men.

There was only one boy in the Bakery learning the trade last year, and he has returned for further instruction. He is likely to be an excellent workman, bread-baker, and pastry-cook.

The work in the foregoing departments is a very important part of our instruction, and those who go out from here with a fair education and a knowledge of a trade are prepared to make a living for themselves and help their parents or friends who sacrificed for them in their earlier years. The extension of the Industrial Departments might well be considered in the near future.

MANUAL ALPHABET IN THE PUBLIC SCHOOLS.

Ten years ago I recommended that, in any series of school books issued under the authority of the Education Department, the Manual Alphabet for the Deaf ought to secure a place and be taught in the Public Schools of the Province. My reference to the matter then was: "I would respectfully urge the great desirability of having the Manual Alphabet taught in the Public Schools of the Province, and of this end having it incorporated in at least one text-book used in each class in those schools. A very few minutes' instruction and practice each day would make each child proficient in its use sufficient for all practical purposes. Even if it is deemed inexpedient to make it compulsory to teach dactylology, yet if only the opportunity were given no doubt a large majority of the pupils would learn and practice it of their own accord without interfering to the slightest extent with their other studies. The population of Canada includes some thousands of deaf-mutes scattered throughout the community, and nearly all hearing people come into contact with them at not infrequent intervals, and it would be of decided advantage to both the deaf and the hearing to possess this easy and ready means of intercommunication. The Province now, each year, spends a considerable sum of money to educate the deaf, in order that they may become useful and self-supporting citizens, able to take their place and work out their destiny side by side with their hearing fellows. Such an expenditure is undoubtedly a wise one, and productive of great benefit to the community at large, as well as specially to the deaf. The results sought for in after life are to a large extent nullified, however, by the lack of a common medium of communication between the deaf and the hearing, the deaf being thus placed at a very great disadvantage in their efforts to obtain a livelihood. Anyone who gives the matter consideration will readily perceive, therefore, that if all hearing people were familiar with the manual alphabet the beneficent effects of deaf-mute education would, for practical use, be multiplied manifold, and the community at large would thus get a vastly greater return for its outlay in this direction with no further expenditure whatever except the insignificant cost of adding one more page to a few of the Public school text-

books. And beyond the public benefit of dactylology for the purpose indicated above, its intrinsic value would make it well worth the while to have it taught in the Public schools; for the occasions are not infrequent in every man's life where the knowledge of this means of silent communication with others, near by or far off, would be of very great practical utility."

VISIT OF DR. LOVE TO EUROPEAN AND AMERICAN INSTITUTES.

Dr. James Kerr Love, the distinguished aurist, of Glasgow, Scotland, has just issued his report on visits to European and American Institutions for the Education of the Deaf during the years 1904-1906. Dr. Love was commissioned by the custodians of the Carnegie Fund to examine into the workings of various schools for the deaf in Canada, America and the Old World. In 1904-05 he made himself acquainted with the workings of the schools for the deaf in Germany, France, Denmark, England, Ireland and Scotland, and in 1906 visited the more important institutions in the United States and Canada. He gives his opinions frankly, and remarks about our school as follows:—

"Belleville Institution, Ontario, Canada. (Principal Mathison).—Two hundred and fifteen pupils. This is a 'combined' school, and but little oral work is attempted. The course is seven to eight years. Canada is peculiarly fitted for the deaf-mute. It is labor which is wanted there more than anything else, and, during the short school course existing at Belleville, it is possible to make the deaf child fit to earn a living with a certainty not known in Britain. The school course is too short for anything but the production of wage-earners, and the classes are too large. But the Principal accomplishes his avowed object, viz., to make his deaf children earn a living in a country where labor is plentiful and workmen scarce. Aside from the question of system, the school is one of the best managed on either side of the Atlantic. The cost per had is £43 per annum."

TO INCREASE THE EFFICIENCY OF THE INSTITUTION.

In the past nearly every year we added some feature towards making our Institution more efficient as experience and circumstances suggested. In the future, among other requirements in this direction, I would suggest:—A Modern School Building with large Assembly Hall, library, art rooms, etc., a Gymnasium with swimming tanks, a Playroom for small girls, a Kindergarten Class, an Advanced Class in literature, General Classes not to exceed fourteen pupils. Change the name to "School for the Deaf." Extend the time limit from seven to ten years for pupils in literary department. Regular drill for the boys is provided when Mr. Rodwell arrives at the new year.

REPAIRS, ALTERATIONS AND ADDITIONS.

Thanks to the generosity of the Department, we were enabled during the summer to make extensive and much-needed repairs and improvements in and about the Institution. New metal ceilings have been put in eleven class-rooms and the boys' and the girls' sitting-room, and the latter has also a new floor. The Superintendent's office has been renovated and the chapel greatly improved in appearance, both the ceiling and the walls having been covered with metal sheeting, decorated and painted. New desks have been provided for the two senior class-rooms; they are of the latest and most approved pattern and can be raised or lowered to suit the convenience of each pupil. A new cement floor was put in the basement, which will serve as a

boys' play-room. A cement walk has been laid from the Institution to the road; also other walks around the buildings as required. The chief improvements, however, have been in the engineer's department, where a new engine for running the laundry, and other work, has been installed; also, a new hot water heater, so that there should now be no difficulty in keeping every part of the building in even heat during the most inclement weather.

A new School House, with assembly room, class-rooms, gymnasium, swimming baths and other conveniences, is an absolute necessity, and the erection of it should be commenced without delay. In the past, the present buildings have been taxed to their utmost capacity and the probabilities are that the number of pupils will increase from year to year in the future. Even with the present population, the buildings are too small to meet requirements. The overcrowding of school-rooms, dormitories, etc., is very injurious to the health of the children, teachers and officers. To eat, sleep, go to school, and work in the same building from day to day, during a season, is very trying to those compelled to stay here. The majority of those attending the Institution are too young to engage for exercise at the manual trades; therefore, more sheltered room for stormy days is needed for recreation and physical culture

Other additions are required, such as another root-house, an extension and rebuilding of the present conservatory, which has outlived its usefulness, a new shed for housing farm implements, a dividing fence in barnyard and cement walks where the plank ones are becoming dilapidated.

The piano in the officers' parlor is used up generally and a new one would greatly add to the enjoyment of those living inside the building during the long winter evenings.

VISITING CLERGYMEN.

The clergymen of the various denominations have been very attentive and regular in their visitations to the children belonging to their churches, and great good has been accomplished. Through their ministrations, a number of pupils have joined the Presbyterian Church, the Methodist Church, the Roman Catholic Church, the English Church, and the Baptist Church. The regular visiting clergymen on our list are: Rev. Canon Burke, Rt. Rev. Monsignor Farrelley, V.G., Rev. Chas. H. Emerson (Baptist), Rev. G. W. Beamish (Anglican), Rev. A. H. Drumm, Rev. R. S. Laidlaw, B.A. (Presbyterian), Rev. R. H. Leitch, Rev. J. P. Wilson, Rev. Geo. Brown (Methodist), Rev. Father Twomey, Rev. Father J. A. Traynor. Mr. Paul Denys has been indefatigable in specially preparing the pupils of the Roman Catholic Church for confirmation. A Bible-class on Sunday afternoons, at which the International Series of Sunday-School Lessons have been taught to eighty or ninety of the larger pupils, and carried on for a number of years by Miss Annie Mathison, will be hereafter in charge of Miss G. Linn, who is well qualified for the post. Miss Mathison, although not officially connected with the Institution, knowing the sign language of the deaf thoroughly, gave her services voluntarily and freely for the past ten years without any remuneration whatever. The pupils valued her work and have given many evidences of their interest therein.

INCREASE OF SALARIES.

It is well known that the cost of living has increased from thirty to forty per cent. during the last two years, but the salaries of our teachers and officers have remained stationary. Those officers and teachers who are maintained in the Institution do not feel the increased cost of living to such an

extent as those who are compelled to live in the city. Rents have gone up, and all the necessaries of life cannot now be purchased as low as they could a few years ago. I would earnestly recommend that the scale of salaries as presented to you by me last session be adopted. In the estimates to be prepared, the salaries of those teachers and officers deserving of an increase will be recommended, and I trust that those who have worked long and faithfully for years past will receive liberal treatment. Some of our teachers and officers have gone on for ten, fifteen and twenty years without any increase in their emoluments. A little addition would put new heart into them and they would feel that the efforts they have given for the advancement of the deaf, which is a very laborious and nerve-straining work, are appreciated.

FARM AND GARDEN.

The work on the farm and garden this year has been encouraging, and our returns are somewhat better than they were last season. The new farmer and gardener is a very industrious worker and has taken a great interest in making the place attractive, more particularly the front grounds. The hay crop was an excellent one, and oats and barley were up to the average. The early potatoes were good and yielded liberally, but the later ones were poor in quality on account of the dry weather. Mangolds, carrots and turnips were up to the average. Corn did fairly well, and the fruit from the apple-trees was good in quality and the quantity above the average. The fruit was saved in good condition, as it was nearly all hand-picked.

PUBLISHERS' LIBERALITY.

The proprietors of a large number of newspapers throughout the Province have been very liberal in supplying copies of their publications for the pupils' reading-rooms, and their generosity has been thoroughly appreciated. I hope these favors will be continued.

CHANGES.

Dr. P. D. Goldsmith, attending physician at the Institution for several years past, retired from the service to-day. Dr. W. W. Boyce, of Belleville, will succeed him and assume the duties to-morrow, October 1st. General good health prevailed during the session, and there are no deaths to record.

MY RESIGNATION AS SUPERINTENDENT AND PRINCIPAL.

It is with the deepest regret that I now vacate my position as Superintendent and Principal of this Institution. It is always painful to sever our connections with those with whom we have been associated in congenial work and pleasant companionship—doubly so when our relations have been so long and so agreeable as mine have been with the staff and the deaf children in the Institution, the deaf throughout the Province, and the various Governments under whom I have served.

It is impossible in the brief space at my disposal to give anything like a comprehensive retrospect of the work accomplished by the Institution during the twenty-seven years that I have been its Superintendent and Principal. During that period some twelve hundred pupils have graduated and gone out from our school, nearly all of whom are living happy and useful lives and enjoying their fair share of prosperity; and to this result I trust I have contributed to some small extent. I no doubt have made some mistakes in my administration, and no one knows as well as my-

self how far short I have come of realizing my ideals or of accomplishing all that I had hoped, and that, perhaps, might justly have been expected. Yet I believe I can say in all truth and sincerity that I have given myself with entire devotion to my work and have discharged my duties to the very best of my ability and have made the best interests of the deaf the supreme motive and purpose of my life. I desire no nobler or more enduring monument, nor any higher personal satisfaction, than the knowledge that I may have aided in some degree in bringing a little more of brightness and joy into the lives of our silent ones, who even at the best are deprived of so many of the highest pleasures and richest enjoyments of life.

That our Institution now ranks with and forms part of the Education Department of the Province gives me especial pleasure, and I may just note that my humble efforts, I think, aided very materially in bringing about this most desirable change. For all the good work accomplished by the Institution during my incumbency, however, I do not wish to be considered as arrogating to myself the only or even the chief credit. My utmost efforts would have been in vain had it not been my good fortune to be assisted by a staff of officers and teachers of whose industry, ability and absolute devotion it is impossible for me to speak in too high terms; and it is a great pleasure for me to bear this just tribute of praise to those whose loyalty and hearty co-operation I shall always remember with gratitude. Both my official and my personal relations with every one connected with the Institution and the parents of the children attending, with one solitary exception, have always been of the most agreeable and cordial nature, and it is a source of gratification to know that my successor in office will find on hand so efficient and experienced a staff, every member of which, I doubt not, will serve him with as great fidelity and zeal as I have always enjoyed.

Allow me to thank you personally for many courtesies since you have been Minister of Education and head of this Institution. I have received every consideration that you could possibly extend.

In conclusion, I take leave of the Institution and all connected with it on the 15th of November next. A Divine Providence has been the guiding star of our efforts and I sincerely hope that whatever measure of success the Institution may have had in the past may be but an earnest of the results that may be accomplished in the future.

Your obedient servant,
R. MATHISON,
Superintendent and Principal.

PHYSICIAN'S REPORT.

Hon. Dr. R. A. Pyne, Minister of Education, Toronto, Ont.:

SIR,—I have the honor to present to you herewith the Annual Medical Report of the Ontario Institution for the Education of the Deaf and Dumb, Belleville, for the year ending 30th of September, 1906.

There has been considerable sickness during the session just closed, but fortunately mostly of a mild type and of short duration, only a very few cases of a serious nature having occurred. The session was one of work, absentees from classes being able to get back quickly and losing but little time.

I have the honor to be,
Sir,
Your obedient servant,
P. D. GOLDSMITH, M.D., M.R.C.P.

STATISTICAL TABLES.

TOTAL NUMBER OF PUPILS IN ATTENDANCE FROM OCTOBER 1ST, 1905, TO SEPTEMBER 30TH, 1906.

Males	115
Females	143
Total	258

COUNTIES FROM WHICH THE PUPILS IN RESIDENCE FROM OCTOBER 1ST, 1905, TO SEPTEMBER 30TH, 1906, CAME:

Counties.	Male.	Female.	Total.	Counties.	Male.	Female.	Total.
Algoma	1	3	4	Norfolk	2	3	5
Brant	3	3	6	Northumberland	4	.....	4
Bruce	3	8	11	Nipissing District	3	.....	3
Carleton	8	3	11	Ontario	2	.....	2
Durham	2	1	3	Oxford	.....	4	4
Dufferin	.....	2	2	Peel	1	2	3
Elgin	3	3	6	Perth	2	.....	2
Essex	7	6	13	Parry Sound District	.....	1	1
Frontenac	1	1	2	Prescott and Russell	4	3	7
Grey	4	2	6	Peterboro	3	5	8
Glengarry	.....	2	2	Renfrew	6	5	11
Hastings	4	8	12	Simcoe	4	6	10
Haliburton	3	3	6	Stormont, Dundas	2	2	4
Huron	4	5	9	Thunder Bay District	.....	1	1
Haltoin	.....	1	1	Victoria	3	3	6
Hald mand	2	.....	2	Waterloo	4	2	6
Kent	2	5	7	Wellington	1	2	3
Lambton	1	2	3	Wentworth	2	7	9
Lanark	2	3	5	York	17	21	38
Lincoln	1	4	5				
Lennox and Addington	2	.....	2	Total	115	143	.....
Muskoka District	2	4	6				
Leeds and Grenville	1	.....	1	Grand Total	.....	.....	258
Middlesex	2	7	9				

AGE OF PUPILS.

AGE.	No.	AGE.	No.
6	3	18	10
7	22	19	12
8	17	20	3
9	18	21	4
10	28	22	1
11	15	23	1
12	11	24	1
13	29	25	1
14	24	26	1
15	16		
16	18	Total	258
17	23		

NUMBER OF PUPILS IN ATTENDANCE EACH OFFICIAL YEAR SINCE THE OPENING OF THE INSTITUTION.

	Male.	Female.	Total.
From October 27th, 1870, to September 30th, 1871	64	36	100
" " 1st, 1871, " 1872	97	52	149
" " 1872, " 1873	130	63	193
" " 1873, " 1874	145	76	221
" " 1874, " 1875	155	83	238
" " 1875, " 1876	160	96	256
" " 1876, " 1877	167	104	271
" " 1877, " 1878	166	111	277
" " 1878. " 1879	164	105	269
" " 1879, " 1880	162	119	281
" " 1880, " 1881	164	132	296
" " 1881, " 1882	165	138	303
" " 1882, " 1883	158	135	293
" 1883, " 1884	156	130	286
" " 1884, " 1885	168	116	284
" " 1885, " 1886	161	112	273
" " 1886, " 1887	151	113	264
" " 1887, " 1888	156	109	265
" " 1888, " 1889	153	121	274
" " 1889, " 1890	156	132	291
" " 1890, " 1891	166	130	296
" " 1891, " 1892	158	127	285
" " 1892, " 1893	162	136	298
" " 1893, " 1894	158	127	295
" " 1894, " 1895	160	135	295
" " 1895, " 1896	173	137	310
" " 1896, " 1897	164	128	292
" " 1898, " 1899	161	132	294
" " 1899, " 1900	152	130	282
" " 1900, " 1901	157	143	300
" " 1901, " 1902	147	141	288
" " 1802, " 1903	140	143	283
" " 1903, " 1904	137	134	271
" " 1904, " 1905	130	138	268
" " 1905, " 1906	116	143	258

TOTAL NUMBER OF PUPILS SINCE THE OPENING OF THE INSTITUTION, OCTOBER 27TH, 1870, TO SEPTEMBER 30TH, 1906.

Number of boys admitted	784
Number of girls admitted	608
	1,392

COUNTIES FROM WHICH PUPILS WERE RECEIVED.

Counties.	Male.	Female.	Total.	Counties.	Male.	Female.	Total.
Algoma	5	6	11	Northumberland	17	12	29
Brant	23	10	33	Warwick, P. Q.	..	1	1
Bruce	22	19	41	Monk, P. Q.	..	1	1
Carleton	22	44	66	Ontario	23	14	37
Durham	17	9	26	Oxford	17	16	33
Dufferin	3	3	6	Peel	7	8	15
Elgin	15	13	28	Parry Sound District	4	2	6
Essex	20	23	43	Perth	31	14	45
Frontenac	12	6	18	Peterboro	13	9	22
Grey	27	24	51	Prescott and Russell	23	10	33
Glengarry	7	2	9	Prince Edward	6	1	7
Hastings	34	31	65	Renfrew	17	19	36
Haliburton	5	2	7	Simcoe	29	25	54
Huron	33	31	64	Stormont, Dundas	18	10	28
Halton	5	11	16	Thunder Bay District	..	1	1
Haldimand	7	4	11	Victoria	12	11	23
Kent	27	23	50	Waterloo	20	12	39
Lambton	21	19	40	Welland	6	4	10
Lanark	13	10	23	Wellington	20	16	36
Leeds and Grenville	22	6	28	Wentworth	27	19	46
Lincoln	3	9	12	York	61	56	117
Lennox and Addington	12	12	24	Westmoreland, N. B.	..	1	1
Muskoka	9	8	17	Restigouche, P. Q.	1	..	1
Middlesex	30	22	52				
Norfolk	13	12	25	Total	784	608	1,392
Nipissing District	3	2	5				

Causes of Deafness.

Abscess	6	Fits	16
Accident	12	Gathering of the ears	10
Adenoids	1	Gathering of the head	9
Affection of the ears	21	Inflammation of the brain	15
Bronchitis	7	Inflammation of the ears	6
Bealing	2	Inflammation of the lungs	5
Burns	2	Inflammation of the pulmonary organ	2
Catarrh	9	Inflammation of the spinal organ	3
Canker	1	La Grippe	10
Cerebro-spinal Meningitis	27	Measles	49
Colera	1	Mumps	7
Chicken-pox	1	Paralytic stroke	1
Cold	51	Ricketts	1
Congenital	548	Sunstroke	1
Congestion of the Brain	50	Scabs	1
Diphtheria	9	Scrofula	1
Dysentery	2	Scald head	4
Drank carbolic acid	1	Sore throat	4
Eczema	2	Shocks	5
Falls	29	Sickness, undefined	38
Fever, Rheumatic	1	Spinal disease	3
Fever, Bilious	5	Swelling of the neck	2
Fever, Brain	35	Teething	18
Fever, Intermittent	2	Vaccination	7
Fever, Scarlet	88	Water on tke brain	17
Fever, Spinal	23	Whooping cough	11
Fever, Malarial	2	Cases undefined and unknown	163
Fever, Typhus	6		
Fever, Typhoid	11	Total	1,392
Fever, Undefined	28		

DATE OF DEAFNESS AFTER BIRTH.

Under one year	184	Between ten and eleven years	6
Between one and two years	167	Between eleven and twelve years	2
Between two and three years	143	Between twelve and thirteen years	3
Between three and four years	76	Between thirteen and fourteen years	4
Between four and five years	45	Between fourteen and fifteen years	2
Between five and six years	31	Unknown at what age they lost their hearing, but not born deaf	148
Between six and seven years	16	Congenital	536
Between seven and eight years	16		
Between eight and nine years	3		
Between nine and ten years	10	Total	1,392

RELATIONSHIP OF PARENTS.

First cousins	67	Not related	1,210
Second cousins	31	Unknown	32
Third cousins	24		
Distantly related	28	Total	1,392

NUMBER OF DEAF-MUTE FAMILIES REPRESENTED.

3 families containing 5	15	1,061 families containing 1	1,061
3 families containing 4	12		
32 families containing 3	96	Total	1,392
104 families containing 2	208		

Minister of the Government in Charge:

HON. DR. R. A. PYNE.

Officers of the Institution:

R. MATHISON, M.A. ..... *Superintendent and Principal.*
WM. COCHRANE ..... *Bursar.*
P. D. GOLDSMITH, M.D. ..... *Physician.*
MISS M. ROSS ..... *Matron.*

Teachers:

D. R. COLEMAN, M.A. (Head Teacher).
P. DENYS.
JAMES C. BALIS.
W. J. CAMPBELL.
GEORGE. F. STEWART.
T. C. FORRESTER.
H. L. INGRAM.
MRS. J. G. TERRILL.
MISS S. TEMPLETON.
MISS MARY BULL.
MRS. SYLVIA C. BALIS.
MISS GEORGINA LINN.
MISS ADA JAMES.

Teachers of Articulation:

MISS AGNES A. GIBSON.
MISS FLORENCE CROSS.

Teacher of Fancy Work:

MISS MARY BULL.

Teacher of Manual Training:

T. C. FORRESTER.

Teacher of Domestic Science:

MISS HATTIE H. GOWSELL.

MISS A. CHISHOLM ..... *Stenographer and Clerk.*
WM. NURSE ..... *Storekeeper and Associate Supervisor.*
W. S. MINNS ..... *Supervisor of Boys, etc.*
MISS M. DEMPSEY ..... *Seamstress, Supervisor of Girls, etc.*
MISS FLORENCE E. BATES ..... *Trained Nurse.*
JOHN T. BURNS ..... *Instructor of Printing.*
ALEX. MORRICE ..... *Master Shoemaker.*
CHAS. J. PEPPIN ..... *Engineer.*
JOHN DOWRIE ..... *Master Carpenter.*
D. CUNNINGHAM ..... *Master Baker.*

Farmer and Gardener:

JAMES FORGE.

List of Pupils in the Ontario Institution for the Deaf and Dumb for the Year ending September 30th, 1906, with the Post Office Addresses.

Counties.	P. O. Address.
Algoma:	
Barker Sara Isabel	Sault Ste. Marie.
Beatty, Rachel	Bruce Mines.
Dalgleish, Elizabeth	Sault Ste. Marie.
Zinke, Charles	Steelton.
Brant:	
Hustwayte, John F.	Paris.
Johnston, Anetta	Brantford.
Lloyd, Ruth Gladys	Brantford.
Lloyd, Howard Joshua	Brantford.
Mitchell, George L.	Brantford.
Smith William R.	Tuscarora.
Bruce:	
Atkinson, Gladys Maud	Paisley.
Gerolamy, Edna Marie	Tara,
Green, Mary Annie	Chesley.
Green James	Chesley.
Komph, Spray	Kincardine.
Lobsinger, Alex	Mildmay.
Lorentz, Mary	Mildmay.
Schwalm, Mary	Mildmay.
Weiler, Diana	Mildmay.
Yager, Jeannetta	Chesley.
Yager, Norman	Chesley.
Carleton:	
Chaine, Joseph	Hintonburg.
Delinelle, Victor	Ottawa.
Dillaire, Romeo	Ottawa.
Evoy, James Elgin	Carp.
Gauvreau, Telesphore	Ottawa.
Green, Minnie May	Diamond.
Green, Thomas John	Diamond.
Huband, Gerald B.	Ottawa.
Brigham, Thomas L.	Ottawa.
Parrent, Sophie	Ottawa.
White, Mary I.	Ottawa.
Durham:	
Brooks, Effie M.	Solina.
McMillan Joseph I.	Newcastle.
Sheckleton, Alfred	Burton.
Dufferin:	
Aldcorn, Barbara	Corbetton.
Granger, Martha	Honeywood.
Elgin:	
Buller, Henry	Ridgeton.
Carpenter, Lena M.	Rodnew.
Gwalter, Harry	St. Thomas.
Paul, Edward G.	St. Thomas.
Shepley, May	Clachan.
Steigmeir, Matilda May	Aylmer.
Essex:	
Bain, Olive	Windsor.
Berthiaume, Marilda	Tecumseh.
Berthiaume, Lionel	Tecumseh.
Berthiaume, Dorina	Tecumseh,
Bain, Josephine	Windsor.
Kerr, Avis Isabella	Elmstead.
Luciers, Thomas	McGregor.
Meloche, Edmund	Amherstburg.
Essex:—Con.	
Penprase, Ruth	Elmstead.
Penprase, Alfred	Elmstead.
Petrimoulx, George	River Canard.
Swader, Earl Francis	Windsor.
Walker, Achille	St. Joachim.
Frontenac:	
Barnett, Winnifred	Sydenham.
Barnett, Gerald	Sydenham.
Grey:	
Brown, Thomas H.	Markdale.
Johnston, Bertha	Owen Sound.
Kindree, Earl	Owen Sound.
Scott, William W.	Keldon.
Wilson, Janet B.	Harkaway.
Goetz, Gregory	Owen Sound.
Glengarry:	
Gordon, Mary Jane	Bridge End.
Gordon, Annie M. E.	Bridge End.
Hastings:	
Courneya, Mary A.	Bogart.
Farnham, Leona	Canifton.
Doughty, Mary G.	Eldorada.
Hough, Ethel Viola	Holloway.
Herman, Nina Pearl	Stirling.
Ketcheson, Florence L.	Sidney Crossing.
Nelson, Ethel	Belleville.
Edward, Mary Ann	Boulter.
Smith, Percy	Deseronto.
Smith, Earle A.	Deseronto.
Young, Fred	Madoc.
Ward, Albert Edward	Stirling.
Haliburton:	
Eastman, Alma May	Kinmount.
Gray, Violet	South Lake.
Whistle, Mary Jane	Minden.
Huron:	
Anderson, Harvey	Dungannon.
Colclough, Lorne	Holmestead.
Cole, Amos B.	Clinton.
Balkwell, Clara	Exeter.
Doubledee Lena	Belmore.
Montgomery, Elsie	Gorrie.
Sours, Gladys	Clinton.
Thompson, Arthur	Dungannon.
Young Clara E.	Londesboro.
Halton:	
Hartley, Clara	Milton.
Haldimand:	
Forrester, Harry	Dunnville.
Forrester, Asa	Dunnville.
Kent:	
Beckett, Samuel James	Chatham.
Chevalier, William	Tilbury.
Gibson, Winnifred	Dresden,
Gibson, Maggie	Dresden.
Neville, Mamie	Dresden.
Parker, Beatrice	Dresden.
Toll, Nova Rosa	Ridgetown.

List of Pupils in the Ontario Institution of the Deaf and Dumb, etc.—*Continued.*

Counties.	P. O. Address.
Lambton:	
Breault, Gertie	Sarnia
Jennings, Frank	Forest.
Squire, Edith Annie	Wanstead.
Lanark :	
Blake, Frederick	Almonte.
Hughes, Ernest A. H.	Carleton Place.
Jacklin, Myrtle Verona	Rideau Ferry.
McGregor, Ruby	Almonte.
Pollock, Bessie	Appleton.
Lincoln :	
Fretz, Cora	Grimsby.
Hoare, Ethel M.	St. Catherines.
Heaslip, Myrtle	Wellandport.
McCready, Aletha	Caister Centre.
Swick, Amos	Beamsville.
Lennox and Addington :	
Hartwick, Archibald	Napanee.
McAdam, Wesley	Tamworth.
Muskoka District :	
Croucher, John	Huntsville.
Dierks, Caroline,	Kilworthy.
Ireland, Louis	Bracebridge.
Russell, Alice	Dorset.
Stowater, Belle	Byng Inlet.
Legault, Clarida	Callander.
Leeds and Grenville :	
Countryman, Harvey	Prescott.
Middlesex :	
Courscey, Jane Viola	Lucan.
Fishbein, Sophy	London.
Fishbein, Eddie	London.
Humphrey, Hazel May	London.
Laugheed, Annie E.	London.
Porter, Anne	Newbury.
Russell, Mary Bell	Ailsa Craig.
Ryan, Charles	Lucan.
Steele, Annie M	London.
Norfolk :	
Becker, Ethel Hart,	Clear Creek.
Boomer, Duncan	Windham Centre.
Cole, Rosa	Bookton.
Earl, Charles	Blayney.
Franklin, Sara J.	Clear Creek.
Northumberland :	
Ball, Lisgar	Baltimore.
Ball, Glen	Baltimore.
Parker, Clifford George	Baltimore.
Parker, Clinton John	Baltimore.
Nipissing District :	
Dorschner, Charles	Mattawa.
Gauthier, Alfred	Cobalt.
Ellis, Wesley Earl	Cobalt.
Ontario :	
Eaton, Arthur James	Myrtle.
Quigley, Walter	Oshawa.
Oxford :	
Brown, Florence	Woodstock.
Garner, Esther	Ingersoll.
McFarlane, Mona	Eastwood.
Pipher, Celia	Woodstock.

Counties.	P. O. Address.
Peel :	
Duke, Ettie	Sleswick.
Curry, Duncan	Burnhamthorpe.
Zimmerman, Candace	Palgrave.
Perth :	
Bauman, Isaac	Milverton.
Robertson, Stewart	Stratford.
Parry Sound District :	
Veitch, Elizabeth	Spence.
Prescott and Russell :	
Hughes, Myrtle	Treadwell.
Hughes, Iva	Treadwell.
McLaren, George, D.	Spring Hill.
McLaren, John Charles	Spring Hill.
Pregent, Leopold	Curran.
McDougall, Elsie	Grant.
McDougall, Peter	Grant.
Peterboro :	
Charliebos, Walter	Peterboro.
Kennaley, Winnifred	Peterboro.
Lawson, Lila	Peterboro.
Lawson, Violet	Peterboro.
O'Brien, Gerald	Peterboro.
Harper, Madeline	Peterboro.
Harper, Marion	Peterboro.
Tretheway, Roy	Gooderham.
Renfrew :	
Cuddy, Edward.	Brudenell.
Derochie, Caroline	Aprprior.
Derochie, Clara	Arnprior.
Bruss, Henry	Pembroke.
Lacombe, Joseph	Arnprior.
Marquardt, Gustave	Hardwood Lake.
Reilley, Mary	Pembroke.
Smith, Edward S	Renfrew.
Tracey, John	Pembroke.
Whyte, Eleanor E.	Arnprior.
Whyte, Isabella	Arnprior.
Simcoe :	
Boyle, Mary T.	Midland.
Graham, Victor	Collingwood.
Gannon, Ellen	Phelpston.
Hall, Ewart	Midland.
Hamilton, Alma	Everett.
Hamilton, Enie	Glencairn.
Nelson, Florence	Marchmount.
Paddison, Thomas	Elmsdale.
Tudhope, Laura	Orillia.
Carefoot, Seymour	Collingwood.
Stormont, Dundas :	
Lalonde, Emma Ida	Cornwall.
Legault, Mary	Cornwall.
Loper, Cyril	Morrisburg.
Morton, Floyd	Newington.
Thunder Bay District :	
Burke, Elsie	Port Arthur.
Victoria :	
Fountain, Herbert	Coboconk.
Fountain, Farley	Coboconk.
Jewell, Edna	Manilla.

List of Pupils in the Ontario Institution of the Deaf and Dumb, etc—*Continued.*

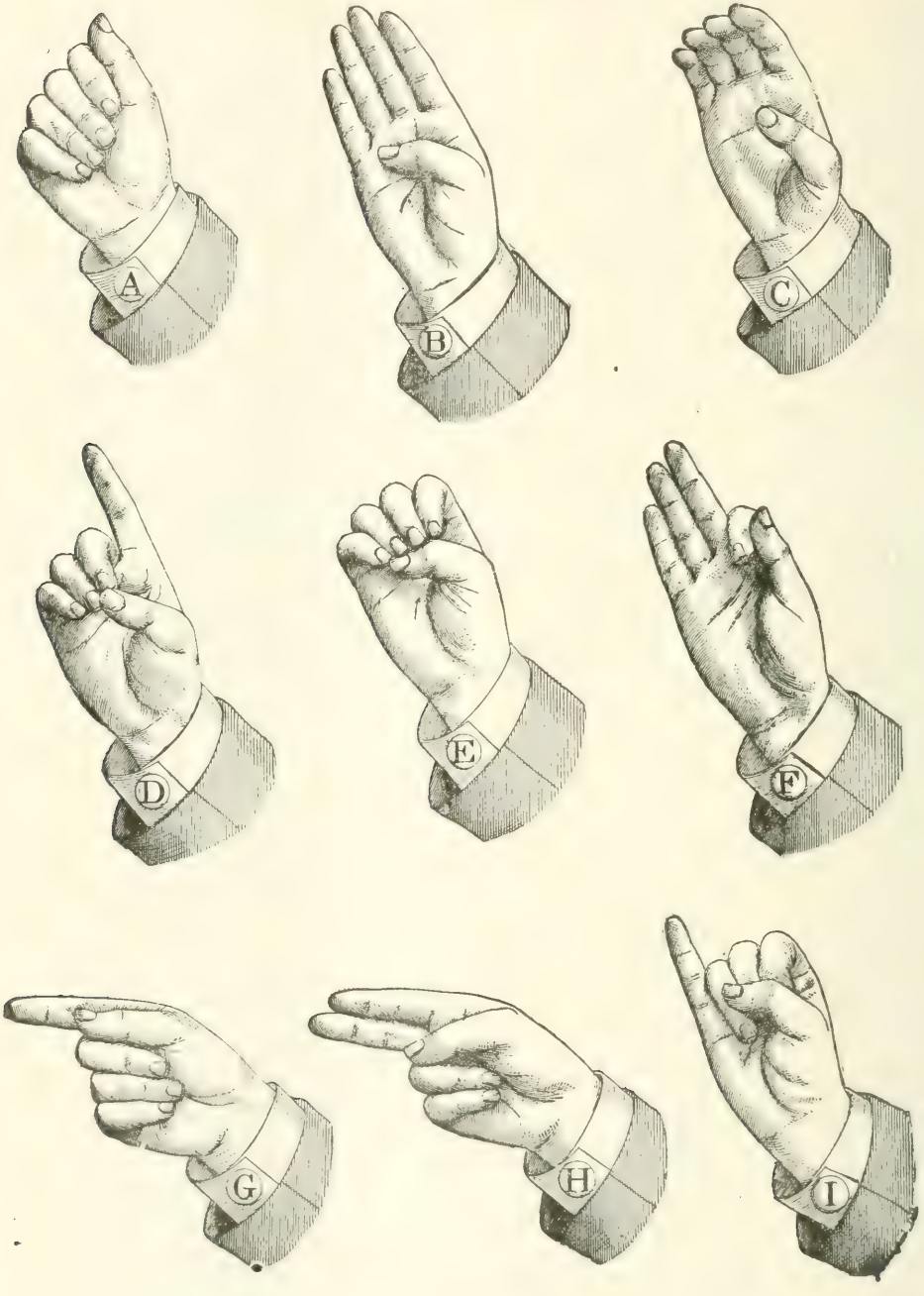
Counties.	P. O. Address.
Sipe, Thomas	Allsaw.
Whitworth, Florence	Lindsay.
Windrim, Rita	Dongola.
Waterloo :	
Cherry, Ida P.	Preston.
Walter, Jno T.	Hawkesville.
Martin, Absalom	Waterloo.
Golds, Margaret	New Hamburg.
Golds, Charlie Watt	New Hamburg.
Underwood, Jonathan	Bridgeport.
Wellington :	
Clark, Adelaide	Guelph.
MacLachlan, Wm	Mount Forest.
Kraemer, Johanna	Glen Allan
Wentworth :	
Carter, Stella	Bartonville.
Depew, Georgie	Hamilton.
Maas, Annie	Hamilton.
Salmon, Albert	Hamilton.
Etherington, Mabel	Hamilton.
Gummo, Gertie	Hamilton.
Webster, John Daniel	Waterdown.
Webster, Elizabeth Ann	Waterdown.
Webster, Elsie May	Waterdown.
York :	
Barclay, Helen	Toronto.
Baskerville, Silas B.	Toronto,
Bowman, Ellsworth	Newmarket.
Brown, Frederick	Toronto.
Brown, Lily	Toronto.
Buchan, Drucilla	Toronto.
York :—Con.	
Buchan, Alexader	Toronto.
Buchan, Jno. P. A.	Toronto.
Brown, Daisy	Toronto.
Best, Olive	Toronto.
Burley, Wiiliam	Torouto.
Cunningham, Martha	Toronto.
Curtis, Lilian	Toronto.
Cratchley, Mabel	Toronto.
Chestnut, Arlie	Toronto.
Elliott, George	Toronto.
Ensminger, Maggie	Markham.
Fleet, Ellen	Toronto.
Francois, Oscar	Toronto.
Hazlitt, Dorothy	Toronto.
Hazlitt, Evelyn	Toronto.
Hazlitt, William	Toronto.
Holbrook, Agnes	East Toronto.
Henderson, Clara	Toronto.
Johnson, William	Swansea.
Kennedy, Muriel H.	Toronto.
Marks, Jennie	Toronto.
Mason, Myrtle	Toronto.
McCaul, Alexander	Toronto.
McCallum, Roy	Strange.
Noble, Edgar	Toronto.
Payne, Thomas Edward	Toronto.
Peacock, Ada	Toronto.
Pinder, Clarence	Davenport.
Stevens, Grace	Toronto.
Wilson, Arthur	Toronto.
Wilson, Charles Alfred	Toronto.
Watson, Muriel	Toronto.

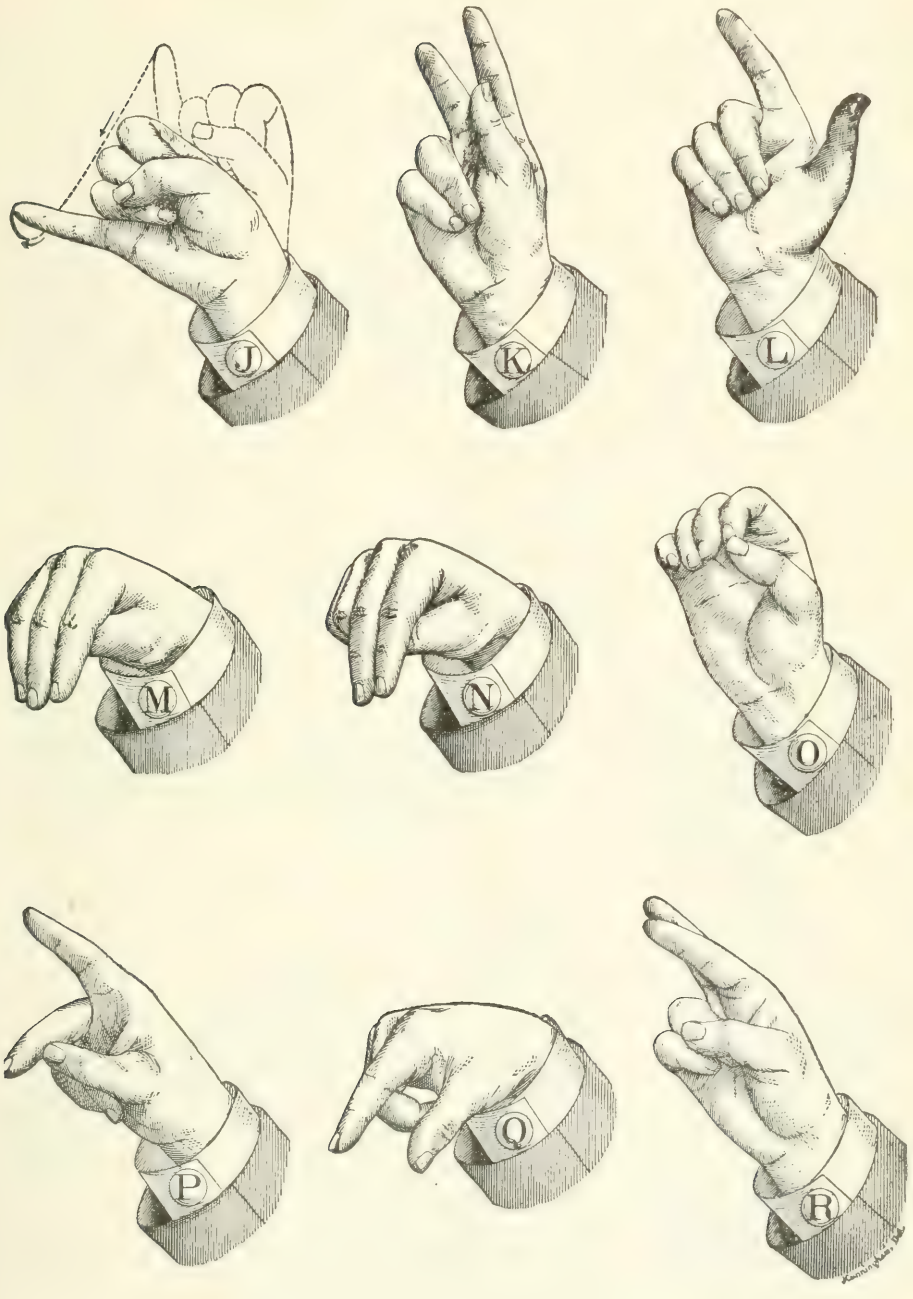
SCHOOLS FOR THE DEAF IN CANADA.

School.	Location.	Date of opening.	Chief Executive Officer.
Manitoba Institution for the Deaf and Dumb	Winnipeg, Manitoba	1888	D. W. McDermid, Principal.
New Brunswick School for the Deaf	St. John, N.B. (Lancaster Hts)	1903	....., Principal.
Nova Scotia—Halifax Institution for the Deaf and Dumb	Halifax, N.S.	1857	James Fearon, Principal.
Ontario Institution for the Deaf and Dumb	Belleville, Ontario	1870	Robert Mathison, M.A., Supt. and Prin.
Quebec — Catholic Male Deaf and Dumb Institute	Mile End, near Montreal, P.Q.	1848	Rev. J. M. Cadieux, C.S.V., Director.
Quebec — Catholic Female Deaf and Dumb Institute	Montreal, P.Q. (595 St. Denis St.)	1851	Rev. Sister Philippe de Jésus, Superior.
Quebec — Mackay Institution for Protestant Deaf-Mutes and the Blind	Montreal, P.Q. (*a*)	1870	Mrs. Harriet E. Ashcroft, Supt.
7 Schools in Canada			

School.	Methods of Instruction.	Industries Taught (*b*).	Number of Pupils. Within the last Fiscal Year.	Present Nov. 10, 1905. Total.	Male.	Female.	Taught Speech. A.	B.	C.	Total have received instruction.	Present Number of Instructors. Total.	Male.	Female.	Deaf.	Artic'la'n.	Industrial.
Manitoba Institution	Combined	Car., Dr., Pe., Pr. Se.	86	69	40	29	20	20	....	169	10	4	6	3	1	3
New Brunswick School	do	Ho., Se.	42	37	19	18	24	.....	3	47	3	1	2	1	2	1
Nova Scotia—Halifax Institution	do.	Dr., Man., Pr., Sh., Ta.	111	85	40	45	67	67	....	526	10	5	5	1	6	1
Ontario Institution	do.	Bar., Car., Do., Dr., Man., Pr., Sh., Sl., Ta.	268	214	91	123	58	.....	.....	1,325	24	13	11	5	2	7
Quebec. Cath. Inst (Male)	Oral Dep / Man. do.	Oral / Manual	Ba., Bl., Bo., Cab., Car., Fa., Ga., Pa., Pr., Sh., Ta., Wt.	110	65 / 45	65 / 45	.... /	65 / 45	65 /	.... /	910	26	26	....	2	8	10
Quebec. Cath. Inst (Fem)	Oral Dep / Man. do.	Oral / Combined	Art., Em., Ho., Kn., Se., Wea.	137	93 / 50	.... /	93 / 50	93 / 6	93 /	.... /	1012	42	....	42	..	13	22
Quebec. Mackay Institution	Combined	Cab., Car., Dr., Sh., We.	80	62	31	31	57	13	....	.....	10	3	7	2	6	4
7 Schools in Canada			834	720	331	389	435	258	3	4,016	125	52	73	14	38	48

THE SINGLE HAND ALPHABET.

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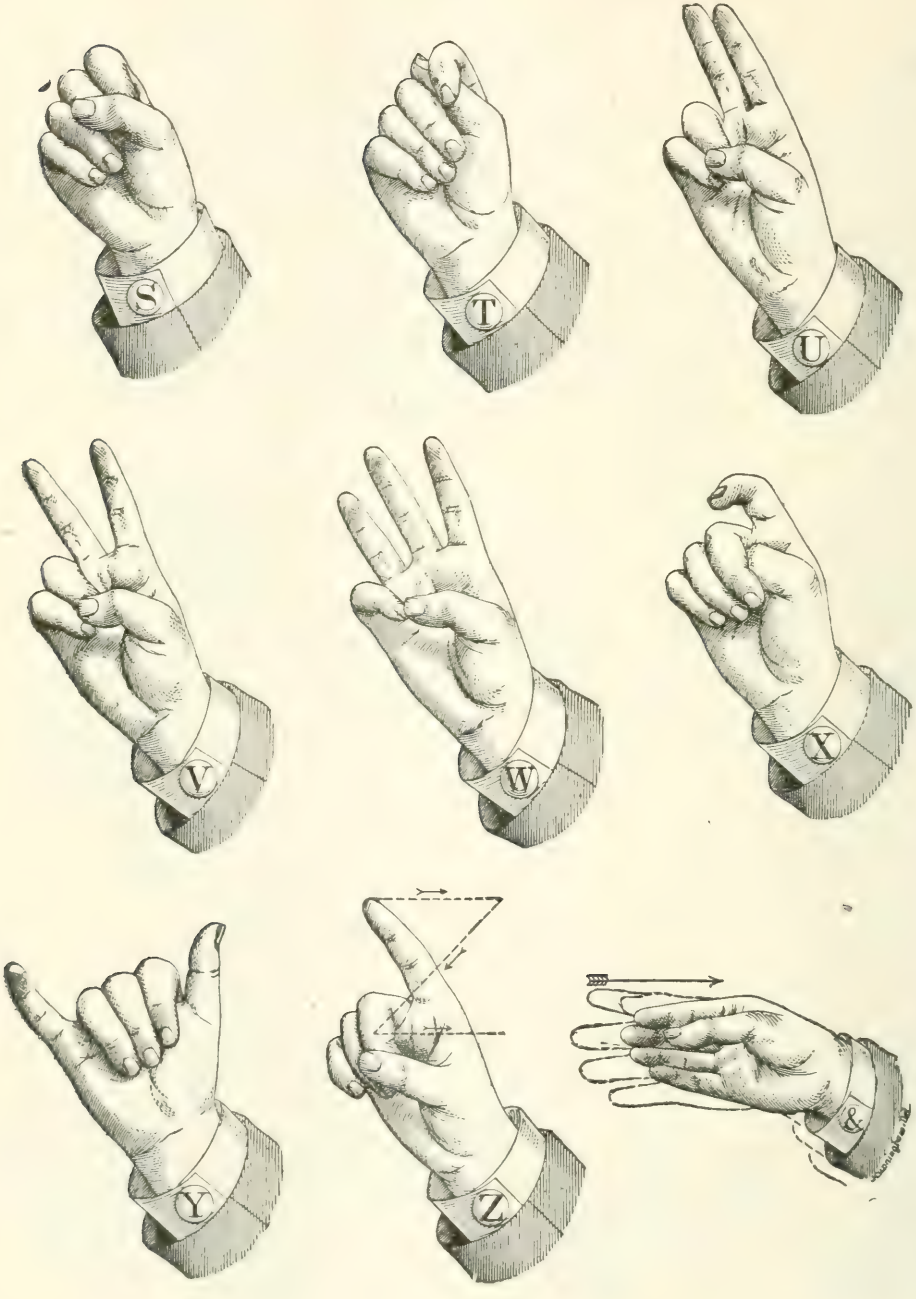
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STATEMENT No. 5.—COST PER PUPIL FOR THE YEAR ENDING SEPTEMBER 30, 1906.

Heading of Expenditure.	Total Expenditure year ending Sept. 30, 1905.	Yearly Cost per Pupil Sept. 30, 1905.	Weekly Cost per Pupil Sept. 30, 1905.	Total Expenditure year ending Sept. 30, 1906.	Yearly Cost per Pupil Sept. 30, 1906.	Weekly Cost per Pupil Sept. 30, 1906.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Medical Department	393 44	1 75	03	302 15	1 41	03
Butcher's Meat, Fish, etc	3,189 76	14 24	27	2,988 12	13 96	27
Flour, etc	1,439 09	6 42	12	1,052 13	4 92	10
Butter and Milk	2,409 37	10 75	21	2,359 17	11 02	21
General Groceries	2,670 54	11 92	23	2,074 04	9 69	19
Fruit and Vegetables	803 97	3 59	07	736 26	3 44	06
Bedding and Clothing	689 16	3 08	06	754 07	3 53	07
Fuel	6,773 92	30 24	58	6,218 49	29 06	56
Light	1,018 20	4 55	08	1,009 80	4 72	09
Laundry	788 56	3 52	07	707 19	3 30	06
Books and Apparatus	409 71	1 83	04	541 69	2 53	05
Printing, Postage, etc	885 70	3 95	08	770 80	3 60	07
Furniture, etc	671 95	3 00	06	455 70	2 13	04
Farm, etc	964 71	4 31	09	477 21	2 23	04
Repairs	1,212 79	5 41	10	638 11	2 98	06
Sewage Works	384 90	1 72	03	92 40	43	01
Water Supply	900 00	4 02	08	900 00	4 21	08
Miscellaneous	1,097 20	4 90	10	497 49	2 33	04
Salaries and Wages	24,730 98	110 41	2 12	25,336 16	118 39	2 28
	$51,433 95	$229 61	$4 42	$47,910 98	$223 88	$4 31

Average Number of Pupils, 1904-05	224	Average Number of Pupils, 1905-06	214
Annual Cost per Pupil	$229 61	Annual Cost per Pupil	$223 88
Weekly Cost per Pupil	4 42	Weekly Cost per Pupil	4 31

NOTE.—Under Vote No. 252, page 32, Estimates 1906, an expenditure of $3,700.13, chargeable to Maintenance, was made under the special heading of "Repairs to Building, Furniture, etc." These repairs were formerly charged to Capital Account for Public Buildings, and do not enter into above account, which is intended to be a comparative statement of the ordinary maintenance of the Institution.

Approved,

R. MATHISON,
Superintendent.

Certified Correct,

M. COCHRANE,
Bursar.

APPENDIX L. — *THE LAKE PLACID CONFERENCE ON HOME ECONOMICS, ITS AIM AND INFLUENCE.*

WITH A BRIEF NOTE OF THE WORK IN ONTARIO, BY ADELAIDE HOODLESS.

In September, 1899, the trustees of the Lake Placid Club—influenced by the president, Mr. Melville Dewey, and his wife, both intensely interested in educational matters—believing that the time was ripe for some united action on the part of those most interested in household economics, sent out invitations to a conference on this most important sociological problem, to be held in their club house, Sept. 19-25.

It was thought that great benefit would be derived from the organization and co-operation of those who were qualified by experience, training, and enthusiasm to direct public opinion on this important phase of education. While the worth of the subject had been recognized, the treatment had not always been wise or productive of the best results. Care was taken that only those who could contribute reliable assistance should be invited to take part in the conference.

Ten representative workers attended the first conference. As the purpose of the conference is to work through existing agencies, little attention was given to such matters as a constitution, by-laws, etc. As a recognition of the valuable services rendered, not only as a writer, but as an active worker in the cause of home science, Mrs. Ellen H. Richards, Professor of Sanitary Chemistry, Mass. Institute of Technology, Boston, was chosen as chairman. The great success and far reaching influence of these conferences is due largely to the tact, scientific knowledge, and enthusiasm of the chairman.

The first matter to receive the attention of the members was a title for the general subject. In order that it should find a logical place in the college and university course it was to be considered a distinct section of the general subject of economics. Domestic science, as understood, could never expect to be recognized as a part of the university curriculum. Therefore, the term Home Economics was taken as a general term, with subdivisions as follows:—Domestic Economy for elementary schools, Domestic Science for high schools, and Home Economics for the college and university.

The next subject to claim attention was the preparation of young women for leadership. It was recommended that the attention of colleges and universities should be directed to the trend of the college curriculum away from the home; that they should recognize the important relation of home economics to the individual home, and the possibility of a new profession commanding desirable compensation.

A discussion of the topics which should be discussed at these conferences occupied considerable time. Committees were apointed to report on courses of study for public and high schools, the training of teachers, college and university work, and bibliography.

At the second conference, held in July, 3-7, 1900, the attendance was increased to thirty. In extending a welcome to the members of the conference and an invitation to hold future meetings at the club, Mr. Dewey said, "Every great movement has been started by a few earnest people: a score of the right ones will do more effective work than a great mass meeting. This is a distinctly sociologic age, and home economics is coming to the front as a part of sociology. More is needed than text-books; inspiration as well as information must be given."

In introducing the general subject to the meeting, Mrs. Richards referred to the need of fundamental work that will touch the lives of all people, and the fact that the only place where this can be done is in the grade school. The aim should be to develop in a child power to be used over his own environment, his food, clothing and shelter.

At this conference such subjects as manual training in education for citizenship, courses of study in colleges and universities, in grade schools, in agricultural colleges, training of teachers, were discussed by selected speakers.

The third conference was held June 28th-July 5th, 1901, with fifty in attendance.

This meeting was devoted almost exclusively to a consideration of courses of study and standards of living.

The fourth conference was held Sept 10th-20th, 1902. Hitherto the work had been confined almost entirely to women, but this year Professor Atwater, the noted scientist of the Department of Agriculture, Washington; Dr. Thomas Wood, of Columbia University, joined Mr. Dewey in promoting the cause. The keynote of this conference was the family, its significance in developing the individual and society, the effect of social changes on family life. A symposium was held on current thought as indicated by recent publications, divided into the following groups:—1st, principles of economy; 2nd, the human side, past and present; 3rd, education; 4th, duties and responsibilities. Committee reports and discussions.

The fifth conference was held in Boston, July 7-9, 1903, in connection with the National Educational Association. As in all conventions of such immense proportions there was too much going on to allow the members of the home economic section to give that undivided attention which characterizes the Lake Placid meetings.

Little progress is recorded as a result of this conference.

The sixth conference was held at Lake Placid, Sept. 19-24, 1904. The feature of this meeting was the presentation of reports and practical suggestions on courses of study in home economics in higher education.

The seventh conference was held June 26th-July 1st, 1905, with an attendance of fifty-two, including such well-known authorities as Dr. Otto Folin, Waverley, Mass., Dr. C. F. Langworthy and Dr. True, of the Department of Agriculture, Washington, Dr. W. C. Stillman, Albany, Mr. H. L. Blackwell, president, Harvard Dining Association, Cambridge, Mass., Mr. LeBosquet, Chicago. One of the most important discussions at this meeting was on the ways and means for the prevention and treatment of tuberculosis (especially on the food side).

The eighth conference was held this year, Sept. 15-22, and was considered by many of those present to be the best yet held. A brief summary of the work done at this conference is hereby given.

Trade schools and their relation to general life and to education were discussed, led by Mrs. M. S. Woolman, professor of domestic art, Teachers' College, N.Y.

In introducing the subject and the speaker the chairman said:—"A study of conditions will reveal the indubitable fact that trade schools have come to be a crying need, because economics, in its broad sense, has found no place in modern home life; because the youth of to-day has no family life in the sense of a helpful productive family life. The old home training of hand and eye gave a different character than that of to-day. The home is lacking in certain essentials of just as it was in 1818 when Boston opened primary schools for those under 7 years because it could no longer depend

on parents to teach their children to read and spell. The school is stepping in to fill the gap because our government is likely to fail unless these disintegrating tendencies are checked. There is now as much objection to industrial education in the schools as in 1818 to reading and writing.

"In what form, then, shall we give children the training needed in order that our industrial system shall not suffer? If the child acquires certain traits by means of this kind of teaching and working, he will carry them into whatever occupation or business he may follow. If we can develop citizenly qualities by this means, give greater confidence and self-respect to the mass of the people, along with some knowledge of the value of time, of the value of textiles and fabrics, and of hand work and thought, who shall say it is not home economics of the best kind?"

Mrs. Woolman drew attention to the fact that our manufactured articles lack in beauty, "for skill and taste can not reign where the producers have no adequate preparation for their work. Child labor was condemned as an injury to both the child and the trade. It was pointed out that the state provides higher education for those who, not needing to be wage earners immediately, have time to continue at school. It does nothing for the great industrial army. Each worker must learn by the hardest and least adequate experience." Europe has set an example in providing for the working classes. The number of trades for which training is given is astonishing to a foreigner. The ethical result of such instruction is seen in higher standards of work, honesty of purpose, and a better understanding of relations between employer, fellow workers and the product.

Technical education was ably supported by Mr. Louis Rouillon, Director, Franklin Union, Boston, and Mechanics' Institute, New York, who drew attention to the two important educational problems which are at present demanding special attention. One is the reconstruction of our scheme of education to meet the demand for adjustment to the needs of the youth of fourteen to sixteen years of age, and the other is the continuation school. The difference between the two is that one deals with the school boy and the other with the employed youth. The effect of this readjustment is that the school boy from fourteen to sixteen or eighteen years of age is receiving instruction tending towards greater social efficiency. Mr. Rouillon emphasized the necessity for developing "industrial intelligence." That it is the duty of school directors to determine what fundamental principles underlie local trades and see to it that adequate instruction is offered in subjects embodying these principles.

In the discussion following Mr. Rouillon's paper, as to the room for such studies in the already over-crowded curriculum, Mrs. Woolman considered that much of this difficulty could be overcome if certain subjects were presented more practically. For instance, mathematics, physics and chemistry are usually so taught that students fail to recognize their relation to everyday life. Mrs. Richards illustrated this point by telling of a boy sixteen years old who had taken a course in physics and electricity, who, when asked, what is electricity? replied, "there are two kinds of electricity, one you keep in jars, the other you light the gas with." The boy was unconscious of what was going on about him.

In discussing the work of the elementary schools, Dr. Putnam gave some very interesting statistics, showing the need of attention to the work done in these schools. She said, there were over 5,000,000 new children entering the primary grades each autumn. When (what is called in Canada the senior grades) the grammar grades are reached there are only 1,300,000 of them left; only 250,000 enter the high school, of whom 75,-

000 are graduated. Nineteen-twentieths of all pupils never enter high school. (The proportion is about the same in Canada.) It was stated that the education of the poorer classes in America does not compare favorably with that in Sweden, Belgium, Germany, and those countries in which industrial training is very general.

Mr. Dewey urged the members of the conference to use their influence first, last and always to encourage our strong institutions to respond to the call of any great body of students.

The next subject taken up was "Domestic Science Teaching." Mrs. Norton, Chicago University, said, "The difficulty in training teachers seems to be that there are so many things to teach. They must have fundamental science training, chemistry, botany, physics. They must have power to apply these sciences to everyday life, their science must not be merely theoretic. They must have a knowledge of art as applied to the household. They must have technic before they begin to teach. They must be able to do things. They must know how to teach and have a broad knowledge of educational problems. The teacher must be able to relate her work to the other subjects.

The matter of entrance requirements, especially to the higher courses, must be carefully thought out. So much of the work required is not done properly in preparatory schools.

The discussion brought out the fact that, while interest in home economics is spreading, there is a very imperfect understanding of its scope and of the preparation requisite for teaching it. That the lower schools will suffer, until the higher schools recognize the real character of home economics and give it academic stamp.

Dr. Langworthy called attention to the need of summarizing and digesting information on home economics topics scattered through scientific periodicals and transactions; as there would be fewer people fighting windmills if ascertained facts were more readily accessible. Teachers should give up teaching fads and confine themselves to facts.

Dr. Putnam gave some interesting experiences gained through a two months' inspection of the various domestic science classes in the United States. Dr. Putnam visited ninety centres and her summing up of the work is as follows:—"I found 20 per cent. of the work hopelessly bad, 60 per cent. merely tolerable, but I found 20 per cent. so good as to make us feel it worth our utmost efforts to raise all to this higher standard. Training schools and teachers must be improved. A woman of proved ability should be inspector of domestic science classes in every locality. Good teachers will do much better under such stimulus. It is a serious handicap to place this scientific work under a supervisor of manual training."

Dr. Putnam's views were heartily supported by the conference.

A Course in Household Arts for Grade and Rural Teachers.

In discussing this matter three points were brought out:—(1) The average child does not like to go to school. (2) The schools of to-day do not prepare children for life. (3) That the present school programme is so overcrowded that there is no room for domestic science and manual training.

Miss Snow, School of Education, Chicago University, threw some light on these questions by asking, "Why does the average child dislike school? Because he sees no use in the work he is asked to do. In watching two

classes at work Miss Snow noted the difference in the interest displayed through different methods of teaching. One class was busy with some examples in arithmetic. Not more than half solved the problem correctly, but it did not make any serious difference to them as they were not going to use the result of their labor. The other class was using every faculty trying to find out the exact size each must make the frame in which to mould the door for his furnace. It made a vast difference to these children whether they solved their problems right. The door must fit or they could not use their furnace. One class was being educated, the other was not." Miss Snow asked, "If it is not time to think a little more of the real means by which a child may be educated and less of the subject matter in the curriculum? I would put household arts in the school to save time, if for no other reason, and teach reading, writing, mathematics and science through this subject, by the real doing of things and so make school and life real to the child." Miss Snow gave a most interesting illustration of how mathematics may be taught in a cooking class. "In a class of six-year-old children, we began with fractions, using the measuring cup. We were making something that required them to know how many halves there are in a whole, how many fourths in a whole, how many fourths in a half. They learned quickly. In making fig sandwiches the recipe called for one-half as much sugar as figs and twice as much water. Each child measured the figs after cutting them in small pieces, then had to find out how much sugar and water to use. The amount of figs varied, so that some of the problems involved were $\frac{1}{2}$ of $\frac{1}{4}$, $\frac{1}{2}$ of 2, $\frac{1}{2}$ of $\frac{1}{2}$, $\frac{1}{2}$ of $\frac{1}{3}$, $\frac{1}{3}$ of 2. They solved them quickly. Why? Because each one wanted to make his sandwich."

The two points in mathematics are, seeing through the problem, and learning the tables and processes by which that problem may be solved. Why should years of a child's life be spent in trying to master these by mechanical methods when they can so easily be gained through doing things. Miss Snow gave nine points which had been given by a professor of mathematics to his class as a reason why domestic science should be taught in the schools:—

1. To give children an intelligent interest in and a wholesome regard for the occupations in the home.

2. To bring school and home into closer cooperation towards social ends.

3. To give the young pupil a knowledge of and a regard for elementary science by the scientific study of those common concerns of home life which may mean so little but should mean so much.

4. To make young persons more keenly conscious of the great importance of physical health and vigor, and consequently mental health, by due regard for diet, sanitation, and right living.

5. To make pupils more intelligent regarding the procuring, transporting, and preparation of food, clothing, and shelter.

6. To impress patrons and children of the school with the usefulness and the worth, even in a physical sense, of education.

7. To afford relaxation from mental tasks by engaging the hands as well as the brains in the work of education, thus attending to the motor as well as the mental interests of the child.

8. Enabling children to be real social factors in the home by comparing quality, cost, and ways of preparing things in the home with similar facts learned at school, thereby influencing parents to modify customary procedure towards something better and more economical.

9. To give the pupils a deeper personal regard for community interests and occupations in general, and the persons whose lives are identified with these interests. (An outline of what could be done in rural schools with an alcohol stove, a chafing dish and a few simple utensils was given, and will be supplied by the writer to any one desiring a copy.)

In the discussion following Miss Snow's paper, Dr. Putnam drew attention to the importance of treating questions properly. "It is hard to tell where to stop when the children ask questions, and a broad knowledge is needed for this. If you do not answer at the time you are checking the inspiration on their part to wish to know. In my investigations I found only two teachers who said, 'I do not know. You look it up, and I'll look it up, and to-morrow we will talk it over together.' They were first-class teachers, trained in special subjects. How many teachers would have to say 'I do not know' if they were not thoroughly trained special teachers? Some pretend to know and mislead." The desirability of giving all teachers a general knowledge of domestic science, not to fit them to teach, but to enable them to better appreciate its place in the curriculum and co-ordinate other work with it, was advocated by the conference.

"The Trend Toward the Practical in Education," was ably presented by Mr. Dewey. As space prevents anything like an adequate synopsis of Mr. Dewey's paper, one point only shall be given. Mr. Dewey drew attention to the attitude of the majority of university professors towards the more practical subjects, and incidentally remarked "that knowledge must have a certain age before it becomes cultural, when it is so far behind the times that it ceases to be practical, then it becomes cultural."

A prominent educator says:—"Some day, several thousand years to come—when spectacled professors will study American antiquities—all these common practical processes of making shoes in the nineteenth and twentieth century, the ways of cooking meals, manufacturing clothes, etc., will become 'cultural' subjects on which learned courses of lectures will be given and which will be accepted as proper subjects for theses for the degree of Doctor of Philosophy."

A professor of Greek to-day would feel sensitive about his ignorance on the details of dress, the way sandals were made in Greece two thousand years ago, but he might (as some do) pride himself on his ignorance of how shoes are made in a Boston shoe factory. He feels he must know all about the preparation and use of papyrus and parchment used in ancient and mediæval times, but as for knowing how the paper he writes on is made, that is something it is good form for a professor to be ignorant of."

"Euthenics in Higher Education: Better Living Conditions," by Mrs. Ellen H. Richards, brought out many strong points in favor of higher education in right living.

In explaining the terms "Euthenics," Mrs. Richards said:—"Eugenics treats of the better born; euthenics of the better 'raised.' Eugenics is at present an academic study. Euthenics is the practical application of well known laws.

"What college or university has been enough in touch with the times to inspire the educated classes with a desire to secure, first for themselves, and then for all, that birthright of material surroundings which will aid and not hamper mental and spiritual development. That man is slow to accept his limitations is seen in the carelessness that he shows as to his own welfare, the way in which he fouls his own soil and streams, and the manner in which he uses the fruits of the land to his own detriment. It would be easier to teach an old dog new tricks than to convince educational

authorities that these fundamental principles of all living matter demand an entire revolution in teaching, that it is of far more consequence to the state to have sane, well-balanced citizens capable of clear thinking than to have so-called scholars learned as to points of past history. A pernicious fallacy rules in academic circles, that as mankind was in the past, so he is now, and so will be in the future.

"The greatest need of mankind to-day is a knowledge of himself, of the means of making the best of himself and of serving his fellow man efficiently. He needs to know the laws of nature that he may work with and not against them, that they may help and not hinder him. It is this side of education, taking perhaps one-fifth of the time, but ever-present in idea, that is meant by euthenics; the science of better living conditions in order that the human race may enter into its heritage of full organic life, instead of sinking below the beasts of the field.

"Every higher school clings to the pre-evolution ideas, that no matter how a student eats, no matter where he sleeps, or what he wears, a book and midnight oil will make a scholar of him. All attempts to bring into use plain scientific and economic facts meet a blank wall—'these are not mentally nutritive.' Not till an avalanche has swept away the old foundations and all, can the new be built. Meanwhile, science is having her innings in our new possessions, where the trained young people are going fearlessly in the light of sure knowledge, boiling the lettuce and drinking distilled water as a matter of course; while home colleges furnish dirty milk and deadly water, because, forsooth, to consider such things is applied science and beneath academic notice! 'Pride goeth before a fall.' Academic pride does not yet allow that the desertion of classic shades by the shrewd young minds is due to its own stupid blindness in clinging to the worn-out tradition of the past and ignoring the fresh growth of knowledge adaptable to present conditions."

"The Problem of the College Table" was thoroughly discussed, and facts were presented proving conclusively that diet is an important factor in the college course.

"The Nutritive Requirements of the Body" was exhaustively treated by Professor Bendict, Wesleyan University, Middletown, Conn.

It is impossible to do justice to this subject, in a brief abstract, of Professor Bendict's paper. Some of the points emphasized were the following:—Since the selection of food is determined by a number of factors, we find that people have formed certain dietetic habits. Variations in geographic location, climate, and proximity to the sea result in wide variations in the nature of the available food materials. Aside from these, we have those depending on the individual, of which age, sex, weight, muscular activity, and financial condition are the most important. The young growing individual requires relatively more food than the adult, who no longer has to build, but only to repair tissue. In general, women consume less food than men. Body weight is no inconsiderable factor in determining food consumption, but muscular activity modifies, more than any other one factor, the quantity of food utilized by man.

The many experiments made to determine digestibility of different food materials, show two things of much importance. (1) That with vegetable foods, as ordinarily prepared for the table, the protein and fats are somewhat less thoroughly digested than animal protein and fats; (2) that the body absorbs the nutrients from food in practically the same proportion without regard to the amount ingested. About 97 per cent. of the pro-

tein in animal foods, such as meats, eggs, and dairy products, is digested, whereas only about 84 per cent. of the protein of vegetable foods as ordinarily served is absorbed.

The net or actual energy value to the body is not the total potential energy of the food consumed, but it is the potential energy minus that of the corresponding excreta. This is expressed in the table as "fuel value." When food is absorbed in excess of the immediate needs of the body it will be stored chiefly as fat.

Obviously food should be ingested in just the proper amount to repair the waste of the body; to furnish it with the energy it needs for work and warmth: to maintain it in vigor, and, in the case of immature animals, to provide the proper excess for normal growth. In just what proportion and amounts the various nutrients should be ingested, experimental physiology and studies of nutrition attempt to determine.

The general question, as discussed, considered not so much food ingested as food absorbed, and it assumed that *well prepared and digestible* foods are consumed in quantities not too excessive so far as any particular meal is concerned—thus eliminating the question of periodic or occasional over-eating (*e.g.* Sunday dinners, Christmas and Thanksgiving feasts, etc.)

From results of numerous dietary studies made with different classes of people living under different conditions, it has been observed that whatever may be true of a few individuals, with communities a generally low condition of mental and physical efficiency, thrift, and commercial success is coincident with a low proportion of protein in the diet.

While there is considerable speculation regarding the true amount of protein necessary to keep the body in the best condition, no such uncertainty exists regarding the question of energy requirement. Knowing that the law of the conservation of energy obtains in the human organism, it is only necessary to know the energy output per day to determine the energy requirement.

Prof. Bendict gave the result of several experiments with the respiration calorimeter.

"Dietetic Experiments at Yale University," by Prof. Irving Fisher, professor of Political Economy, Yale University.

In introducing Dr. Fisher, the chairman said, "economy in that most precious of all forces, human power, is gained by a suitable and not excessive food supply; the right balance between income and outgo, and it is quite appropriate that a professor of economics should discuss the food question from this standpoint, as well as from the possibility of halving the expense of food, which is, on the average, half the cost of living."

In determining the economic value of a man as affected by certain dietary habits, Dr. Fisher gave some very interesting experiments which had been conducted on nine healthy students. "They began in January and lasted four and one-half months. At the middle of the experiment, when the first results were reported, the men had improved 50 per cent. in endurance. During the second half the men improved an equal amount, so that in June they were able to do double the amount of physical work, as shown by gymnasium tests, which they had been able to accomplish in January. This great increase in working power is ascribed entirely to dietetic causes, for the reason that no other factor to increase endurance was known to be present, though there were several factors, such as overwork, which had the opposite tendency. The change in diet was chiefly the more thorough mastication of the food taken. During the first half the rules of the experiment were two:—

"1. Thorough mastication, with the attention on the taste and enjoyment of the food, and not on the mere mechanical act of mastication.

"This natural, enjoyable mastication was practised, after the men became accustomed to it, up to the point of involuntarily swallowing.

"2. Implicit obedience to appetite. The men ate nothing which they did not choose of their own free will. Nothing was set before them except as was ordered. In order to enable them to choose properly, a wide range of choice was provided. Meats were available three times a day, but it was found that by thorough mastication the men gradually lost their desire for meat and substituted cereals, fruit and nuts. At the end of the first half of the experiment their daily consumption of meat was little more than half of its original amount.

"During the second half of the experiment a third rule was added. This was that, when the appetite was in doubt as to its choice of foods, the benefit of the doubt was given to non-flesh foods and other foods low in proteid. In June it was found that the men had decreased their consumption of flesh foods to one-sixth of its original amount.

"The practical conclusion from these experiments is that it is in the power of an ordinary so-called healthy individual to double his endurance in five months by increasing the thoroughness of mastication, prolonging the enjoyment of food, and acquiring a more sensitive and accurate choice of amounts and kinds to meet the ever-varying daily need of the body."

In the discussion following Dr. Fisher's paper, Mrs. Richards told of having been able by great care in diet to supervise laboratory experiments fourteen hours a day through many summer weeks, and keep well.

Illinois Summer School for Graduate Workers reported a most successful session, held July, 1906, at the University of Illinois, under the direction of the following committee:—Miss Caroline Hunt, University of Wisconsin; Miss Isabel Bevier, University of Illinois; Miss Abby Marlatt, Providence Manual Training High School, and Dr. Langworthy, Department of Agriculture, Washington.

It was felt that the educational side of the problem had not been adequately met and steps should be taken to emphasize this phase of the work.

Secondary Education.

This committee referred to the able report given by Dr. Helen Putnam before the American Academy of Medicine in Chicago, November, 1905, on teaching hygiene through domestic science in our primary and secondary schools.

The manner of presenting the subject of home economics in our schools is one that each year receives criticism. To-day we have (1) The science application method; (2) The sociological method; and last year the ethical method was suggested, with the result that no one teacher is quite sure that she is doing all that even her limited capacity allows.

Uniformity can come only when the secondary schools are required to fit pupils to pass the definite examinations required for college entrance.

A study of present college courses indicates that the work in most of the colleges is high school work, using high school methods. It must be that the conditions for entrance are inadequate, or that heads of departments have not yet studied the subject according to girls' mental development.

Some problems are best met in the grades, some during adolescence, and others during college years.

The committee recommends formulating some standard which could be accepted as a college entrance requirement in colleges and universities offering courses in home economics.

Reports were presented on "Standards of Routine Work in the Home," "Experiments in Household Hour Service," "Public Health in the United States," "Bibliography," "Household Industrial Problems," all of which contained valuable hints and information, but space prevents anything like a reasonable synopsis of them.

Reading Courses and Their Results.

Miss Martha VanRensselaer, Cornell University.

Cornell University College of Agriculture has a state appropriation for the extension of agriculture in New York. This is devoted to a farmers' reading course, nature study for children, and a reading course for farmers' wives.

Miss VanRensselaer has charge of this work and reports increased interest each year. The essential element in the reading course for women is the improvement of the farm home and securing better and easier methods of doing work where so many industries are represented.

Printed bulletins are sent out, one each month, for five months of the year. Questions are asked relating to the subject of the bulletin, which will give the point of view of the reader and call forth her experience and knowledge. Twenty bulletins have been published, making thus far a four years' course of five bulletins each.

They relate to the conservation of strength and time, farm home industries, woman's relation to the public school, reading in the home, and bulletins on food and sanitation. The membership numbers 18,000, nearly all farmers' wives and daughters.

Last winter the work was extended to the organization of a winter's course in home economics, free to the women of the state. The result was more than was anticipated. There were forty-two members, beside the attendance of many who did not register. About twenty women who hold prominent positions in teaching home economics in the best institutions in the country were employed, most of them for a week, to give special lectures. These, with the assistance of men and women connected with the university, gave an unparalleled course of lectures in home economics. As a result there was much enthusiasm for a continuation of the work in the university.

The Need of, and Training of the Dietician.

In discussing this subject, Miss Grace McCullough, of New York, showed very clearly the need of the special dietician in large institutions. "The dietician is the young daughter of domestic science. She has a dignified standing, a changing, yet brilliant, future. A successful dietician must be an all-round woman with technical training. She should rank as an officer of the institution. As her training is in part along the same lines as the doctors, she must cooperate with them. She must have great executive ability, an abnormal amount of common sense, infinite patience, tact, a strong personality, and an up-to-date knowledge of the science of food and serving, with the ability to adapt it to the needs of her institution.

"The salary should be commensurate with the training and work demanded."

In answer to inquiries as to how and where a suitable course of training could be provided for dieticians, it was stated that Teachers' College, Columbia University, and Macdonald Institute, Guelph, Ontario, were offering special courses in this work.

The Report of the Committee on the Training of Teachers.

A committee, consisting of Dr. Helen Putnam, Mrs. Adelaide Hoodless, and Dr. Langworthy, was appointed to report on the training of teachers.

In adopting the report, as amended, after long and careful deliberation, the conference took one of the most important and far-reaching steps in its history.

The appointment of the committee of five, authorized by the adoption of the report, was intrusted to the chair.

Report as Adopted.

Resolved: That in the opinion of this conference the schools which have sent out insufficiently prepared teachers have done great harm to the cause of sound education in general and to this movement in particular.

That in grammar grades, while much work is well done, much is incorrect or of little worth; and many courses lack features essential for pupils of these ages.

That unsymmetric courses of only elementary grade in domestic science have often been introduced into high schools.

That high school and ill-balanced courses have been introduced into some colleges under the head of home economics because teachers lacked perspective of values and definite knowledge of the meaning of the subject.

The committee recommends that the conference appoint a standing committee of five "on home economics" teachers, with power to appoint sub-committees; and that this general committee be instructed to report progress at each annual meeting, till discharged. The objects to be pursued are:—

1. After personal investigation (not in any case trusting to printed matter exclusively) the conference shall prepare a list of approved institutions for training teachers in home economics, such list to be revised from time to time as investigations and improved standards permit.

2. There should be published a minimum standard for home economics teachers in the two higher grammar grades and in secondary schools, and a standard which could be accepted as a college entrance requirement for colleges and universities giving courses in home economics.

3. Certification of teachers in home economics should be provided for by the school law of each state as in other subjects. Till this is accomplished it is desirable that this conference appoint a registration board which, on request, will register such teachers of home economics as satisfactorily meet the standards established by the conference.

4. All schools or colleges which train elementary or secondary teachers should be asked to require home economics as part of their general training, not to qualify them as teachers of home economics but that they may better coordinate the instruction of children.

5. For the special benefit of public school teachers, the National Educational Association should have a section on home economics.

6. These steps, if determined on by the conference, can be made influential only by persistently calling the attention of educators and of the general public.

For this a special press agent should be appointed.

Standing Committees for the Year.

Higher education.
Secondary education.
Elementary schools.
Trade schools.
Food and nutrition.
Hygiene as a basis for domestic science in elementary and secondary schools.
Home and club study.
Household industrial problems.
Standards for routine work in the home.
Teachers' section.
Committee of five.
Bibliography.
Press.
Finance.
Programme and membership.
(The writer commends the above list to Women Institute workers and other organizations of women.)

Summary.

The object of the Lake Placid Conference is (1) educational, (2) economic and social.

The necessarily brief abstract of the proceedings of the last conference show not only careful selection of subjects, but pronounced interest in the work by leading scientists and educators throughout the country.

The Lake Placid Conference stands for a higher standard of home life and social efficiency, and as a means to this end the conference seeks the corelation of home economics with general education.

Mrs. Richards, in her synopsis "The Present Status and Future Development of Domestic Science Courses in the High School," emphasizes the following points:—

Subjects of social value must be given in the elementary school in such a way as to secure valuable habits and manipulative skill.

Development of reasoning power, and application of science belong in the high school.

Principles and relations should receive special attention in colleges.

Practice again belongs in professional and post-college schools.

Domestic science in the high school should concern itself enough with the working machine of productive daily life (social and economic questions in an elementary way to be sure) to leave an impression of forceful reality. It should not be burdened with the work of other departments, and especially it should not be expected to lay its own foundation, a thing not required of other high school subjects.

In elementary and secondary schools we claim that education should produce:—

Social Efficiency, character as expressed by truth, honor, self-sacrifice and cooperation.

Economic Efficiency, self-support, not a social debtor, adding to group possessions and pleasures, a productive citizen of the state.

Individual Efficiency, personal health, joy in living, contributing in self and children to race progress. For the individual, better physical con-

dition for work and for pleasure. For the state, it should result in securing for the child such environment and atmosphere as shall permit full intellectual and spiritual development of the soul.

A good course in domestic science can contribute largely to the production of these educational results.

The following abstract from a report presented at the fourth conference, by Professor Kinne, of Teachers' College, Columbia University, gives a clear definition of home economics:—"Home economics is more than the application of science and fine arts merely to the end that certain results may be correctly reached, or certain articles artistically made, for we must consider the place of these arts in the social order, and this brings us immediately to the thought of the home and its conduct; the *home, as the place where the individual is given such physical and ethical surroundings, that he is made an effective human being; the conduct of the home, on the material side, as the seeking to produce the best results with the least expenditure of energy, material, time, and money.*"

Here we have reached the study of economics; the economics of home consumption. To sum up the whole matter, then, our subject consists of certain household arts and activities, based on a number of sciences, and leading to the study of economics.

"Does society as a whole show any needs that such a study would meet and answer?" Surely the most casual student of present social conditions must see that a large proportion of our population, both rich and poor, is in poor physical condition, and that there is in consequence great economic waste; for lack of vigor means lack of effective accomplishment, and also makes necessary large expenditure for remedial measures. With better shelter, food, water, ventilation, cleanliness and proper clothing, a check would be placed on this enormous waste, and more real work would be done, and there would be fewer patent medicines, patent foods, and hospitals. Another common waste is through poor buying and extravagant use of materials. To what are these things due? (1) Ignorance of women on these points in the management of a household; (2) Ignorance of men and women together in the management of that larger household, the city (or state).

1. Domestic and economics conditions have greatly changed during the last half century, and while men have met such changes in their business lives and adapted themselves to them, women go on in many respects in the ways which were adequate in the days of their grandmothers, but are far from sufficient now.

Again, the daughter from the family of small means must often take her place as a bread-winner outside the home, and the child of well-to-do parents is absorbed in her school life. Both, equally, enter upon their married life with little or no knowledge of the *business* of housekeeping before them.

2. If all our citizens, both men and women, were alive to the physical and economic evils consequent on bad building, imperfect water supply, defective disposal of waste, and dirty streets, these things would not exist.

The teaching of home economics should go far to correct these errors, for it emphasizes health as a normal condition, and gives knowledge of the physical conditions that will maintain this; emphasizes the home as the unit of society, and the management of the home as a business needing brains and special training; shows how, on the economic side of marriage the wife is the business partner, that her position as spender and manager is no less important than the husband's as earner, and that he cannot succeed if she fails to meet her obligations.

The Lake Placid Club.

"Lake Placid Club is a cooperative summer home of congenial people, having no transient guests, and differing as much from atmosphere, spirit and management of a hotel as a refined home from a conventional boarding house." This beautifully and ideally conducted home is offered to the members of the Lake Placid Conference for ten days each year, either in late June or middle September, rooms at half price, and meals at cooperative cost to members.

Application for attendance should be accompanied by references when personally unknown, as the Lake Placid Club admits guests for a first visit only on introduction. Payment of annual dues ($2) entitles one to receive all official publications of the conference, including full reports of discussions in printed proceedings, and to vote when present at meetings. A cordial invitation has been extended to all Canadians interested in the study of Home Economics, and able to contribute in any way to the advancement of the work, to become members of the conference. For further particulars address Miss Grace Godfrey, Secretary, Lake Placid Conference, Lake Placid, The Adirondacks, N.Y.

Home Economics in Ontario.

As an appendix to this report of the Lake Placid Conference, a brief summary of the present status of home economics in Ontario will show that in organization, training of teachers, and standards of instruction it will bear comparison with the instruction provided in the United States. The colleges and universities of the United States are in advance of Canada in this branch of education, but from present indications Ontario will soon offer a course in higher education equal to the best yet offered in any country.

While home economics (better known as domestic science) is a comparatively new branch of education in Ontario, (the first public school classes in domestic science being established in Hamilton in 1895, as an experiment) it has not suffered by delay. As the discussions at the Lake Placid Conference show, the advance in scientific knowledge makes it a question whether really valuable work was contributed in the early days, when the instruction was more or less haphazard.

The promoters of the work in Ontario have had the benefit of the earlier organization in other countries, and were careful to avoid their mistakes; consequently a corelation with other school studies, through the incorporation of domestic science into the normal school course for teachers, placed the subject on an educational basis at the very beginning. In the planning of the course of study and in the pedagogical training of teachers of home economics, great care was taken to insure not only accuracy of information, but an academic entrance requirement was established. In the early days a misconception of the term "Domestic Science" led to some confusion between the public mind and the principles of education. Domestic science and "cookery" were synonymous terms, and educators objected to anything of such a technical character being introduced into the schools.

But when the subject came to be understood as elementary economics, and as a strong factor in adding interest to school life, through a closer connection between the home and the school; and when it was learned that the subject was an aid to mental development through "learning by doing," few of the progressive teachers opposed its introduction into the schools.

The Department of Education has from the beginning been in hearty sympathy with the movement, indeed, workers in the various States are somewhat envious of the support given to this branch of education by the Ontario Government.

At the present time, domestic science is taught in twenty-five schools, for which government aid is provided. A course of study has been prepared, and approved by the Department of Education. It has been difficult to make a distinction between elementary and high school work, owing to the subject being introduced simultaneously into the schools, but now, for those centres in which the work has been carried on for three or four years, a special course has been prepared, introducing the more scientific features of the subject.

This grading of the work calls for a higher standard of teaching, as in many places the teacher has both elementary and high school pupils to instruct. Therefore, those teachers who were able to undertake the work at the beginning, and often with insufficient training, find themselves unable to meet the requirements of the new standard. There is much less chaos in the training of teachers in Ontario than in the training schools of the United States, and it is hoped that in a short time there will be one standard only, which will insure symmetry, and a sequence of instruction from the elementary school to the university, based on educational principles.

The great drawback in Ontario, as in the United States, has been the difficulty in securing instruction in the higher branches of education, so as to secure the highest qualification for those who have charge of the training of teachers. A carefuly planned course in the university is the hope of the future in this respect.

Through the generosity of Sir William Macdonald, in providing suitable buildings, the Ontario Government has been able to provide a training school for teachers of "Home Economics" for elementary and high schools equal to the training offered in any school on the continent.

With the added generosity of Mrs. Massey-Treble, who is providing a building for "Home Economics" at the University of Toronto, which the university authorities are pledged to maintain, Ontario will stand in the forefront in this branch of education.

ADELAIDE HOODLESS.

APPENDIX M.—*DIGEST OF THE SCHOOL LAWS OF THE STATES OF THE UNITED STATES OF AMERICA REGARDING TEXT-BOOKS.*

The following digest was prepared from the Report, for 1904, of the Commissioner of Education, Washington, D.C., published in 1906.

The laws of the States of Delaware, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, New Jersey, Pennsylvania, Rhode Island, and Vermont make it compulsory on school authorities to provide free text-books for pupils.

The following States have provisions in their laws whereby the schools through the district, county, town, or corporation, as the case may be, may provide free text-books if desired: Colorado, Connecticut, Iowa, Kansas, Michigan, Minnesota, Ohio, West Virginia, Wisconsin; while the laws of the States of Colorado, Illinois, Indiana, Michigan, Missouri, Nevada, South Carolina, and Virginia make provision for free text-books to those pupils whose parents or guardians are not able to buy them.

The following States require a uniform series of text-books in all the schools: California, Delaware, Indiana, Kansas, Louisiana, Missouri, Montana, Nevada, North Carolina, Oregon, South Carolina, Tennessee, and Virginia.

Arkansas, Georgia, Iowa, Kentucky, Maryland, Mississippi, South Dakota, Washington, and West Virginia have provisions for county uniformity; while all the States, so far as can be ascertained from the Commissioner's report, require at least school district uniformity in text-books.

Arkansas.

The State Superintendent shall prepare, for the benefit of the common schools of the State, a list of text-books on orthography, reading in English, mental and written arithmetic, penmanship, English grammar, modern geography, and history of the United States as are best adapted to the wants of the learner, and as have been prepared with reference to the most philosophical methods of teaching those branches, and shall recommend the said text-books to teachers and to directors throughout the State. At the annual school election on the third Saturday in May, the voters of each school district may vote on the question of uniformity of text-books. If a majority of the votes cast be in favor of uniformity, the county judge shall appoint two citizens interested in public schools and the State Superintendent shall appoint two teachers holding first grade certificates, who, with the county examiner as chairman, shall constitute the county school-book board and shall select a series of text-books to be used exclusively in the county for six years. Any teacher using any other book instead of those adopted by said board shall be subject to a fine of not less than $15. Fine for selling book at higher than contract price, not less than $10.

California.

In compiling or causing to be compiled and adopted a uniform series of school text-books for use in the common schools of the State, as required by section 7 of article 9 of the State constitution, the State Board of Education shall, within thirty days after the passage of this Act, meet and appoint three members of said board, to wit, the Governor, the Superintendent of

Public Instruction, and one other member of said State Board of Education as a standing committee on school text-books. The said committee shall be designated and known as the State text-book committee, and shall immediately organize and enter upon the discharge of its duties, and shall have power, subject to the approval of the State Board of Education, to revise in whole or in part, and to manufacture such text-books as are now in use; to compile or cause to be compiled under its direction, and to manufacture such other or additional text-books or books as it may deem necessary or proper for use in the primary and grammar schools (the common schools) of the State; to purchase or hire plates, maps, and engravings of copyright matter; to contract for or lease copyrights for the purpose of being used in compiling, printing and publishing such books; to provide for the payment of royalties or for the leasing of plates for the making of the whole or any part of a book or books, and to do any and all acts that may be necessary for the purpose of procuring a meritorious uniform series of text-books for use in all the primary and grammar schools of the State of California. Said committee shall have power, subject to the approval of the State Board of Education, to prescribe and enforce the use of a uniform series of text-books, and to adopt a list of books for supplementary use from which county and city and county boards of education shall select and adopt books for supplementary use in primary and grammar schools in their respective counties and cities and counties, as required by section 1,712 of the Political Code. As soon as any text-book shall have been compiled, printed and adopted, and is ready for distribution, it shall be the duty of every county and city and county superintendent of schools in the State to order a sufficient number thereof to give at least one copy of every such book to every public school district library in the county or city and county in which he is superintendent, and payment therefor shall be made by him by drawing his requisition without the order of the board of school trustees against the library funds of the respective districts in his county or city and county for the cost and remitting the same to the official who has charge of the sale of State school text-books. In cities where the city school superintendent or city board of education is accustomed to draw requisitions upon the library funds, it is hereby made the duty of such superintendents or boards of education to order and pay for copies of books of the State series for their school libraries as hereby provided in lieu of the county superintendents.

The said text-book committee shall elect a secretary, who shall be a person of recognized educational ability and experience, who shall be provided with an office at the State capitol, in Sacramento, in connection with that of the Superintendent of Public Instruction, and who shall keep the books, accounts, and all records of the said committee and perform such other duties as may from time to time be required of said secretary by said committee. Said secretary shall hold office at the pleasure of the committee and shall receive a salary of $165 per month, payable monthly, in the same manner and from the same funds as the salaries of State officers are paid.

The said text-book committee may secure copyrights in the name of the people of the State of California to any book that may be compiled under this Act, and whenever any one or more of the State school text-books shall have been compiled, published, and adopted, the Superintendent of Public Instruction shall issue an order to all county and city and county boards of education by sending notice by registered mail to the secretaries of all such boards requiring the uniform use of said book or books in all the primary and grammar schools of this State, and when said order shall have thus been given and published, the same shall remain in force and effect for a term

of not less than four nor more than eight years: Provided, That said order for the uniform use of said book or books shall not take effect until the expiration of at least one year from the time of the completion, purchase or the leasing of the electrotype plates of said book or books; but nothing in this Act shall be construed to prevent any county, city or city and county from adopting any one or more of the State series of school text-books whenever said book or books shall have been published and is ready for distribution; Provided further, That whenever any plates, maps, or engravings of any publisher or author are adopted for use as hereinbefore provided, the State text-book committee shall enter into a contract for not less than four nor more than eight years for the use of the same, and shall require a good and sufficient bond of the owner of such plates, maps, or engravings, guaranteeing that the same shall be kept revised and up to date, as may be required by the State Board of Education.

Any county, city and county, city or school district that refuses or neglects to use the State series of school text-books in the grades and in the subjects for which they are intended and at the time required in the foregoing subdivisions of this Act must, upon satisfactory proof of such refusal or neglect, have the State money to which it is otherwise entitled withheld from it by the Superintendent of Public Instruction.

The Superintendent of State Printing shall have the supervision of all mechanical work connected with the printing and publishing of such books as may be compiled and adopted by said text-book committee and approved by the State Board of Education; and all such printing and binding shall be done in the State printing office. The superintendent of State Printing shall annually on the 1st day of July, and oftener, if requested, submit to the said text-book committee a detailed statement showing the number and the name of books of the State series published by him during each year.

Whenever any book authorized to be published under this Act is ready for sale or delivery to pupils, the State Printer shall submit to the said State text-book committee, and it in turn to the State Board of Education, an itemized statement showing the exact cost of the material, printing, binding and finishing of such book in editions of 5,000 or more, and the State Board of Education shall thereupon determine and fix the price of such book, as required by law, by adding to the cost of manufacturing the price contracted to be paid as royalty, or for the use of the plates, maps, or engravings of the copyright matter therein contained, and said price shall be deemed to be the whole cost of publication of such book at Sacramento. The amount fixed for royalty or cost of plates of copyright matter shall, as the books are sold, be kept separate from other proceeds from the sale of State school text-books and deposited in the State treasury to the credit of a fund to be designated and known as the "text-book royalty fund," the same to be paid out quarterly or semi-annually, as may be agreed between the owners of copyright matter and said text-book committee, on the order of the said State text-book committee, in payment of royalties or hire of plates, maps, or engravings of copyright matter in the same manner as other claims upon the State Treasurer are paid.

The sum of $20,000 is hereby appropriated, out of any money in the State treasury not otherwise appropriated, for the puprose of carrying out the provisions of this Act. Said appropriation, which shall be known as the "text-book appropriation," shall be subject to the drafts of the said text-book committee for all the expenses incurred by it, except the salary of the secretary, which is otherwise provided for in this Act. Provided, That all claims shall be presented to the State Board of Examiners for their approval;

said appropriation shall be subject to the drafts of the said committee for all moneys needed for the payment of royalties, for the purchase or hire of such plates, maps, or engravings that may be necessary, but which can not be arranged to be paid for as provided in sub-division seventh hereof, for expert opinions as provided for in sub-division 9 of this Act, for printing, stationery, postage, and expressage that will be required by said committee, and for manufacturing any edition of any book of the State series now in use or which may hereafter be adopted for use in the primary and grammar schools. It is provided that all moneys that have been received or that may hereafter be received from the sales of State series of school text-books, except that which is received in payment of royalties and provided in this Act to be deposited to the credit of the text-book royalty fund, shall be kept by the State Treasurer as a separate and distinct fund, to be known as the "State school book fund," which fund shall be subject to the drafts of the said text-book committee for all expenses incurred by the Superintendent of State Printing for all material, labor and other expenses necessary in the mechanical work of printing and publishing State school text-books, all claims to be drawn after being certified to by the Superintendent of State Printing, as provided in sub-division 4 of section 526 of the Political Code; Provided, That all demands on the State school-book fund shall be presented to the State Board of Examiners in itemized form for their approval; and upon the approval of the State Board of Examiners, the State Controller is hereby authorized and directed to draw his warrant, and the State Treasurer is hereby authorized and directed to pay the same, in conformity with the provision of this section.

Before selecting any text-book matter to be used in the compilation or revision of a State school text-book, the said committee may, subject to the approval of the State Board of Education, secure one or more educational experts to examine and give their opinions on the merits of any book or books or parts of a book that may be taken under consideration, and the claims for payment of such expert service shall be paid in like manner as other claims are paid out of the State text-book appropriation: Provided, That the expense of such expert examination and opinion shall not exceed the sum of $200 for any one book may be adopted and published as a book of the State series.

Colorado.

The district school board shall determine the kind of text-books to be used, provided that only one kind of text-book of the same grade or branch of study shall be used in the same department of a school, and that after the adoption of any book it shall not be changed in four years unless the price thereof shall be unwarrantably advanced or the mechanical quality lowered or the supply stopped. The board shall also provide books for indigent children on the written statement of the teachers that the parents of such children are not able to purchase them, and shall furnish free text-books for the use of all pupils when authorized to do so by a majority vote of the district. The board shall also require that pupils be furnished with proper books as a condition of membership in school.

Connecticut.

Any town, at its annual meeting, may direct its school visitors or board of education or town committee to purchase at the expense of said town the

text-books and other school supplies used in the public schools of said town, and said text-books and supplies shall be loaned to the pupils of said public schools free of charge, subject to such rules and regulations as the school visitors or the board of education or town committee may prescribe.

Delaware.

The school commissioners or trustees of each school district in the State shall furnish the necessary text-books free for the use of all the pupils enrolled in the free schools of the State in the manner hereinafter provided.

The school commissioners or trustees shall order from the publisher or publishers the books which have been adopted by the State Board of Education for use in the free schools of the State, at the net contract prices at which the publishers have agreed to supply the same, as follows: There shall be a blank order book prepared by the State Treasurer for the use of the school commissioners, which shall contain duplicate order blanks, with a printed list of the books which have been adopted by the State Board of Education, and the net contract prices at which the publishers agree to furnish the same.

The State Treasurer shall pay the publisher out of the school fund of the State for books thus supplied, and charge the amounts so paid to the respective districts ordering said books, and deduct the same from the amount to which such districts may be entitled under the school laws of the State; but the State Treasurer shall pay no bill for at least thirty days from the time it is rendered, in order that he may be notified by the school commissioners of any error or failure on the part of the publisher to supply the books.

It shall be the duty of the clerk of each school district to distribute the books received as aforesaid to the scholars of the district, or their parents, guardians or other persons, as they desire, upon receipt for the same. The clerk of each district shall be responsible for the safe-keeping of the books furnished him, and also for prices of books sold to parents, guardians, scholars or others. Any money or the value of the books which such clerks shall fail to account for according to law may be recovered in the name of the State by the county superintendent before a justice of the peace, as other accounts, when the amount does not exceed the sum of $200. Such clerk shall, at the expiration of his term of office, turn over to his successor in office all books on hand and take a receipt for the same, which shall be his voucher in settlement. It shall be the duty of the school commissioners to provide for the safe-keeping and care of the books, which shall be returned by the pupils at the close of the annual school term to the clerk of the district, or to such other person as the school commissioners shall designate. They shall also keep a separate account of the amount expended for books, and shall report it under a separate item in the annual settlement required by law. The school commissioners may furnish books at cost to pupils who wish to replace books lost or wilfully destroyed, or who may wish to own their books, and shall turn the proceeds of all such sales into the school fund of the district and report the amount at the time of the annual settlement to State Auditor.

Georgia.

County boards shall prescribe what text-books and books of reference shall be used. The Bible shall not be excluded from the common or public schools of the State. Boards shall not introduce any text or miscellaneous

book of a sectarian or sectional character, and shall provide for the teaching of physiology and hygiene with special reference to alcoholic drinks and narcotics.

County (or city) boards of education, in order to prevent excessive rates of charges for school books, may purchase directly from the publishers such books as may be adopted for their schools, and shall supply same to patrons and pupils at cost, or at such an advance as shall cover cost of handling. The board may make such contract with a local merchant or other person, whom they may require to give bond. Pupils, parents or guardians about to move to another county wherein different books are used may sell their school books to the county at such discount as may cover wear and tear. The boards may arrange to rent books to pupils at just and proper fees and make all proper rules to insure payment of such fees and proper care of books. Copies of all contracts for text-books must be filed with the State Board of Education within ten days. No county board may change or renew any contract for such books before the expiration of five years without first giving sixty days' notice by newspaper advertisement and sixty days' notice to the publisher party to such contract, and then only by a three-fourths vote of the members of such board in session.

Illinois.

The directors shall direct what branches of study shall be taught and what text-books shall be used in the public schools, and shall strictly enforce uniformity of text-books therein, but shall not permit text-books to be changed oftener than once in four years. The directors shall have power to purchase at the expense of the district a sufficient number of the text-books used to supply children whose parents are not able to buy them. The text-books bought for such purpose shall be loaned only, and the directors shall require the teacher to see that they are properly cared for and returned at the end of each school term.

Indiana.

The State Board of Education shall constitute a board of commissioners for the purpose of making a selection or the compilation for use in the common schools of a series of text-books on the following branches: Spelling, reading, arithmetic, geography, English grammar, physiology, history of the United States, and a graded series of writing books, no book to contain anything of a sectarian character. As soon as the board shall have entered into contract for the furnishing of the books the Governor shall announce the fact, and the school trustees of every school corporation within thirty days shall certify to the county superintendent the number required by the schools under their care. The county superintendent makes requisition upon the State Superintendent and the latter upon the contractor, who shall, within ninety days, ship the books to the county superintendent, from whom the school trustees shall immediately procure and furnish them to the patrons at the price fixed. It shall be the duty of each township trustee and each school board to furnish the necessary school books to all such indigent children as may desire to attend the schools.

Iowa.

The board of directors of each school corporation are authorized to adopt text-books for all branches authorized to be taught in the public schools, and

to contract for and buy such books and other necessary supplies out of the contingent fund and sell same to pupils of their district at cost, the money received therefor to be returned to said contingent fund. The said board shall annually certify to the board of supervisors the additional amount necessary to be levied for the contingent fund, not to exceed $1.50 in any year for each pupil residing within the corporation; but the board shall not contract any debt for such purpose. In the purchase of text-books it shall be the duty of the board of directors or the County Board of Education to take into consideration the books then in use in the respective districts, and they may buy such additional number of text-books as may from time to time become necessary to supply their schools, and they may arrange on equitable terms for exchange of books in use for new books adopted. If at any time the publishers of such books as have been adopted shall neglect or refuse to furnish them at the lowest price furnished any district or state board, then the board of directors or county board of education shall bring suit upon the publishers' bond. Before purchasing text-books under the Provisions of this Act, the board of directors or county board of Education shall advertise, by publishing a notice for three consecutive weeks in one or more newspapers published in the county, stating the time up to which bids shall be received, the classes and grades for which text-books and other necessary supplies are to be bought, and the approximate quantity needed, and the board shall award the contract for the text-books and supplies to any responsible bidder or bidders offering suitable text-books and supplies at the lowest prices, taking into consideration the quality of material used, illustrations, binding, and all other things that go to make up a desirable text-book, and may to the end that they may be fully advised, consult the county superintendent, or in the case of town or city independent districts, with city superintendent or other competent persons, with reference to the selection of text-books. It shall be unlawful for any board of directors or county board of education to change within five years, except as provided for above, any text-book that has been regularly introduced, unless authorized to do so by a majority of the electors present and voting at the regular annual meeting, due notice having been given.

Any person desiring to furnish books or supplies to the county shall deposit in the office of the county superintendent samples of all text-books included in his bid, accompanied with lists giving lowest wholesale and contract prices, and every successful bidder shall enter into sufficient bond for the faithful performance of his contract.

When a petition signed by one-third of the school directors in a county shall be filed in the office of the county superintendent at least thirty days before the annual school election in March asking for uniformity of text-books in the county, the county superintendent shall notify the county auditor and board of supervisors in writing, and the county board of education (composed of the auditors, superintendent, and supervisors), shall convene and arrange for a vote upon the question by the electors. Should a majority of the electors voting at said election favor a uniform series of text-books for use in the county, the county board shall select the text-books for the entire county outside of cities and towns and contract for the same, and the public schools shall use the books so selected. The board may arrange for depositories and may pay for the books from county funds and sell them to districts at same price, proceeds to be returned to the county funds by the county board monthly. Cities and towns may vote to adopt and buy books at prices fixed by county boards.

Whenever a petition signed by one-third of the legal voters of a corporation asks for a vote on free text-books, the question shall be submitted at the next annual meeting. If the proposition carries the board shall procure such books as shall be needed, in the manner provided by law for the purchase of text-books, and shall loan them to pupils free of expense. The electors may direct the board to discontinue supplying free books.

Kansas.

The State text-book commission shall consist of the State superintendent as chairman *ex officio* and eight members to be appointed by the Governor and confirmed by the Senate for a term of four years, who shall receive $5 per day of actual service (unless already receiving some stated salary from State, county, or city) and actual expenses going and coming. Said commission shall select and adopt a uniform series of text-books for use in the public schools of the State. Bids must be accompanied by certified check for $1,000, to be forfeited to the State in case of failure to enter into proper bond and contract if awarded. Contracting publishers shall arrange with at least one dealer or agent at each county seat, who may charge a commission not exceeding 10 per cent. on the contract prices; but contractors shall furnish any citizen books at contract prices and deliver same to any railroad station in the State upon receipt of cash orders of not less than $10. Upon a vote of two-thirds majority, any district or city may purchase text-books out of the incidental funds and furnish same to pupils free. Contracts shall be entered into for periods of five years, and to use any other book than those adopted, except as a reference book or in a branch not covered by books adopted, is punishable by a fine of from $25 to $100.00, or imprisonment not to exceed ninety days, or both. It shall be unlawful for any school board to purchase or contract for any map, chart, globe, or other school apparatus, except scientific apparatus for high schools, unless same shall have been submitted to the text-book commission at a regular or special session and by them approved and a maximum price therefor fixed by said commission.

Kentucky.

The county board of examiners in each county shall adopt, on penalty of a fine of $200, a list of text-books on the subjects taught in the common schools, which shall be used in the common schools for five years. Any county board of examiners, whenever any publisher or person selling text-books desires to have his books adopted in the common schools in any county, shall require to be filed a sample copy of each, with its lowest retail price (which shall not be higher than the price obtained in any other section of the United States) at which it is to be sold to patrons and pupils, and shall execute a bond of $10,000, with good security within the State. In cities of the first, second, third and fourth classes the board of education select the text-books.

Louisiana.

The State board shall strictly enforce a uniformity of text-books and shall adopt a list, which shall not be changed for four years.

Maine.

School books, apparatus and appliances, including those for high schools, shall be provided at the expense of the town, under regulations made by the school committee for their distribution and care. The value of any such book or appliance lost, destroyed or unnecessarily injured by a pupil whose parent or guardian does not, after due notification, make satisfaction therefor, is reported to the assessors and included in the next collection of town taxes. Text-books are uniform for all schools in the same town, and are selected and contracted for by the school committee, not to be changed within five years unless by a vote of the town.

Maryland.

Boards of county school commissioners shall adopt text-books, purchase, after inviting competition, and loan them to pupils without charge under proper regulations for their care. Change to free books to be made gradually as new books are needed, beginning with first grade; no board being required to spend more for such books than the county's pro rata of a standing appropriation of $150,000 a year: Provided, That indigent pupils in all grades shall receive free books. Parents or pupils who desire may purchase their own books. Any book or series may be changed at the option of the county board. County boards shall report annually to State board the title, publisher, and net cost of each book so purchased, which information shall appear in State board's annual report. No book shall contain anything of a sectarian or partisan character.

Massachusetts.

The school committee shall direct what books shall be used in the public schools, and shall prescribe, as far as is practicable, a course of studies and exercises to be pursued therein. The school committee shall, at the expense of the town, purchase text-books and other school supplies used in the public schools, and, subject to such regulations as to their care and custody as it may prescribe, loan them to the pupils of such schools free of charge, and if instruction is given therein in the use of tools and in cooking, may so purchase and loan the tools, implements, and materials necessary therefor.

In a city which, by vote of the board of aldermen, and in a town which, by vote of the inhabitants at an annual town meeting, accepts the provisions of this section or has accepted the corresponding provisions of earlier laws, the school committee shall make regulations with reference to the care, custody and distribution of books and supplies so loaned, and may provide for the continued use of any text-books by such pupils throughout any grades. Such pupils may, if the school committee so votes, purchase from such city or town, at such time and place as the school committee designates, at not more than the cost price to such city or town, any text-books which are or are to be used by them in the public schools, and, if the committee so votes, pupils who complete two years in any public school in grades more advanced than the fourth grade may, upon graduating from the grammar school and upon application to the school committee, be permitted to acquire the permanent ownership of such free text-books used during the last year of their attendance in the school as they may select.

The school committee shall, at the expense of the town and in accordance with appropriations therefor previously made, procure apparatus, reference books and other means of illustration.

A change may be made in the school books used in the public schools by a vote of two-thirds of the whole school committee at a meeting thereof, notice of such intended change having been given at a previous meeting.

Michigan.

The district board may purchase at the expense of the district such text-books as may be necessary for the use of children when parents are not able to furnish the same, and they shall include the amount of such purchase in the report to the township clerk, to be levied in like manner as other district taxes. Each school board of the state shall, when authorized by the district, purchase text-books used by the pupils of the schools in the district in each of the following subjects: Orthography, spelling, writing, reading, geography, arithmetic, grammar (including language lessons), national and state history, civil government, and physiology and hygiene, and all text-books used in any district shall be uniform in any one subject. Text-books so adopted shall not be changed within five years. The text-books to be used for instruction in physiology and hygiene, with special reference to the nature of alcohol and narcotics and their effects upon the human system, shall give at least one-fourth of their space to the consideration of the nature and effects of alcoholic drinks and narcotics and the books used in the highest grade of graded schools shall contain at least twenty pages of matter relating to this subject, and all text-books used in giving the foregoing instruction shall first be approved by the state board. When the district has authorized the district board to raise by a tax a sufficient sum to comply with the foregoing provisions, it shall contract, at a price not greater than the net wholesale price, or through advertisement, for the books selected, to be loaned to the pupils. Any district may take further action at a subsequent annual meeting after it has either adopted or rejected free text-books. Any officer refusing or neglecting to purchase or to provide the money for purchasing the text-books voted shall be deemed guilty of a misdemeanor, and upon conviction shall be liable to a fine of $50 or imprisonment in the county gaol for thirty days, or both. But any board may buy its books of local dealers if sold as cheaply as offered in the lowest bid.

Minnesota.

The Board of Trustees or Board of Education of each school district is empowered to adopt and contract for text-books for the schools under their charge; they may purchase and loan same free to pupils or sell same at cost. No adoption or contract shall be for a period less than three nor more than five years, during which time the text-books so adopted or contracted for shall not be changed. At an annual meeting after due notice, or whenever five or more legal voters of a common school district shall petition the board to do so, a special meeting may be called, and the question of providing free text-books shall be submitted to the voters; if a majority vote be in favor of free text-books, the board shall provide for same, payment to be made from the school funds of the district.

Mississippi.

The county school board shall appoint five teachers of recognized ability, and the superintendent, two, who shall constitute a committee for selecting a uniform series of text-books. They shall serve five years, and books shall be selected for five years. The county superintendent is *ex officio* secretary of the committee, shall record its proceedings, and shall fill any vacancy occurring in said committee. He shall contract with publishers for books adopted, the form of contract and amount of publisher's bond to be fixed by the State Board of Education, which contracts shall specify prices for exchange, introduction and permanent supply. The books adopted shall be used by all schools in the county, except in city districts, the trustees of which shall adopt books for use therein. Instruction shall not be given in any branch to a pupil who is not supplied with the books adopted for that branch. The State Board shall provide for the adoption of a text-book on any additional branch which may be added to the curriculum.

Missouri.

The state auditor, attorney-general, state superintendent, president of the state normal school at Kirksville, and one practical public school teacher to be appointed by the governor, constitute the school-book commission, each of whom shall receive $5 per day and actual travelling expenses for the time they are in session, not to exceed thirty days. They shall advertise for bids from reliable publishing houses, and each house bidding shall submit a copy of the book or books proposed to be furnished, and a deposit of $500 to cover cost and damages in the event of failure to enter into contract in case such bid be accepted by the commission. Upon opening of bids the commission shall proceed to select the cheapest and best course of text-books so offered, such list to include books needful for high schools on all subjects which the commission think necessary; and contracts shall be entered into with the publishers of such books to supply same for five years, stating price at which books will be supplied to dealers and citizens and terms upon which exchanges of new for old books will be made, and publisher shall execute a bond of $10,000 for the faithful performance of such contract. No text-book except those contracted for by said commission shall be used or taught in the public schools of the state nor sold for use in said schools; and any school director who shall sanction or permit the use of other books (except for supplementary reading) shall be fined from $5 to $25. Directors may purchase at the expense of the district sufficient books for children whose parents are unable to buy them.

Montana.

Every school district using text-books other than those prescribed by the State Legislature (except for supplementary purposes) shall forfeit 25 per cent. of their school fund for that year, and the county superintendent shall deduct that amount from the apportionment so made to that district.

Nebraska.

District school boards, boards of trustees of high school districts, and boards of education in cities shall purchase all text-books necessary for the schools of such district, and they are further authorized to enter into con-

tract as hereinafter provided with the publishers of such books for not to exceed five years. Before any publisher shall be permitted to enter into contract with any school district he shall file with the State Superintendent a good and sufficient bond in the sum of $2,000 to $20,000 for the faithful performance of the conditions of such contracts and the observance of the law; and such publisher shall also file with the State Superintendent a sworn statement of the lowest prices for which his series of text-books are sold anywhere in the United States. For the purpose of paying for school books the school district officers may draw an order on the county or township treasurer for the amount of school books ordered. The county or township treasurer shall pay orders drawn by school district officers for the purchase of school books out of any funds in his hands belonging to the district, except the money received from that derived from the teachers' fund. Any contract entered into with any publisher who shall subsequently become a party to any combination or trust for the purpose of raising the price of school text-books shall, at the wish of the school board of the district using such books, become null and void.

The State Superintendent shall, within thirty days after the filing of the hereinbefore mentioned sworn statement of prices of text-books, have the same printed and forward a sufficient number of certified copies of the same to each of the county superintendents of the State to furnish all the school districts of such county with one copy of each; and the county superintendent shall, immediately after receiving said certified copies of prices of books, send or deliver one of such certified copies to the director or secretary of each school district or board of education in such county, to be filed as a part of the records of such district; and he shall also file one of said certified copies of prices in his office as a part of the records of said office. It shall be the duty of the State Superintendent to prepare and have printed a form of contract between district boards and publishers of school books, and to furnish the same, through the county superintendent, to the several district boards of the State; and no other form of contract shall be used by such district boards and publishers.

All books purchased by district boards shall be held as the property of the district and loaned to pupils of the school while pursuing a course of study therein free of charge; but the district boards shall hold such pupils responsible for any damage, loss, or failure to return such books at the time and to the person that may be designated by the board of such district.

The provisions of this law include all school supplies. Any pupil or parent may purchase from the board such books as may be necessary, at cost to the district. The board may designate some local dealer to handle books for the district, with such an increase above contract price to pay cost of transportation and handling, as may be agreed upon between said board and said dealer.

Nevada.

The State Board of Education shall recommend to the Legislature a series of text-books in reading, writing, spelling, arithmetic, grammar, geography, history of the United States, physiology, drawing, and language, to be adopted for use in all public schools in the State, and no school district shall be entitled to receive its *pro rata* of the public school money unless such text-books are used as shall have been adopted by an Act of the Legislature. No change shall be made in such series except by legislative act, and then not oftener than once in four years. For the schools in which the

trustees may direct instruction to be given in additional branches, there shall also be prescribed by the State Board text-books in algebra, geometry, physics, astronomy, physical geography, chemistry, Latin, rhetoric, literature, English history, general history, civics, geology, bookkeeping, and music.

Whenever it shall appear to the satisfaction of the board of trustees of any school district that parents, guardians, or other persons having control of any child in attendance upon the public school of said district are unable to procure suitable books, stationery, etc., for such child it shall be the duty of such board to procure for such child all necessary books, stationery, etc., the same to be paid for out of the fund of said school district in the same way that other claims against the school district are now allowed and paid. All books, stationery, etc., purchased under this provision shall be the property of the school district, under the care and control of the school trustees when not in actual use.

New Hampshire.

The school boards shall purchase text-books and other supplies required in public schools at the expense of the town, loan the same to pupils free of charge under such regulations for their care as the board may prescribe, and make provision for their sale at cost to pupils wishing to purchase. No book shall be introduced that is calculated to favor any particular religious sect or political party.

New Jersey.

Text-books and school supplies shall be furnished free of cost for use by all pupils in the public schools. Every school district shall raise and appropriate annually in the same manner as other school moneys shall be raised and appropriated in such district an amount sufficient to pay for such text-books and supplies. Every board of education shall make rules for the safe-keeping and proper care of text-books, and shall keep an account of all moneys expended by it for such text-books and supplies, and shall report the same in its annual financial statement. It shall be unlawful for any county superintendent of schools, member of a board of education, teacher, or any person officially connected with the public schools, to be agent for or to be in any way pecuniarly or beneficially interested in the sale of any text-books, maps, charts, school apparatus, or supplies of any kind, or to receive compensation or reward of any kind for any such sale or for unlawfully promoting or favoring the same. A violation of the provisions of this section shall be punishable by removal from office or by revocation of certificate to teach.

New York.

The boards of education or such bodies as perform the functions of such boards in the several cities, villages, and union free school districts of this State shall have power and it shall be their duty to adopt and designate text-books to be used in the schools under their charge in their respective districts. In the common school districts in the State the text-books to be used in the schools therein shall be designated at the first annual school meeting held after the passage of this Act by a two-thirds vote of all the legal voters present and voting at such school meeting.

When a text-book shall have been adopted for use in any of the public or common schools, it shall not be lawful to supersede the text-book so

adopted by any other book within a period of five years from the time of such adoption, except upon a three-fourths vote of the board of education, or of such body as performs the functions of such board, where such board has made the designation, or upon a three-fourths vote of the legal voters present and voting at the annual school meeting in any other school district.

Any person or persons violating any of the provisions of this Act shall be liable to a penalty of not less than $50 nor more than $100 for every such violation, to be sued for by any taxpayer of the school district and recovered before any justice of the peace, said fine, when collected, to be paid to the collector or treasurer for the benefit of said school district.

North Carolina.

The State Board of Education, acting as a State text-book commission, adopts books to be used in the public schools, and they shall not be changed for five years. A sub-commission of from five to ten teachers or superintendents, appointed by the Governor, reports to the commission as to merits and demerits of all books submitted for adoption. Books are distributed through agencies or dealers or else delivered, carriage prepaid, at contract price.

Ohio.

Any publisher or publishers of school books in the United States desiring to offer school books for use by pupils in the common schools of Ohio as hereinafter provided shall, before such books may be lawfully adopted and purchased by any school board in this State, file in the office of the State Commissioner of Common Schools a copy of each book proposed to be so offered, together with the published list wholesale price thereof; and no revised edition of any such book shall be used in the common schools until a copy of such revised edition shall have been filed in the office of the said commissioner, together with the published list wholesale price thereof. The said commissioner shall carefully preserve in his office all such copies of books and the prices thereof so filed. Whenever any book and the price thereof shall be so filed in the commissioner's office, a commission consisting of the Governor, the Secretary of State, and the State Commissioner of Common Schools shall immediately fix the maximum price at which such books may be sold to or purchased by boards of education as hereinafter provided, which maximum price so fixed on any book shall not exceed 75 per cent. of the published list wholesale price thereof, and the State Commissioner of Common Schools shall immediately notify the publisher of such books so filed of the maximum price so fixed. If the publisher so notified shall notify the commissioner in writing that he accepts the price so fixed, and shall agree in writing to furnish such book during a period of five years at the price so fixed, such written acceptance and agreement shall entitle said publisher to offer said book so filed for sale to said board of education for use by the pupil under the terms of this Act. The said commissioner shall, during the first half of the month of June in each year, furnish to each board of education the names and addresses of all publishers who during the year shall have agreed in writing to furnish their publications upon the terms provided. And it shall not be lawful for any board of education to adopt or cause to be used in the common schools any book whose publisher shall not have complied as to said book with the provisions of this Act.

If any publisher who shall have agreed in writing to furnish books shall fail or refuse to furnish such books adopted as herein provided to any board

of education, it shall be the duty of said board at once to notify the said commission of such failure or refusal; the commission shall at once cause an investigation of such charge to be made, and if the same is found to be true the commission shall at once notify said publisher and each board of education in the State that said book shall not hereafter be adopted and purchased by boards of education, and said publisher shall forfeit and pay to the State of Ohio $500 for each failure, and the amount when collected shall be paid into the State treasury to the credit of the common school fund of the State.

Each board of education, on receiving the statements above mentioned from said commissioner, shall, on the third Monday in August thereafter, meet and determine by a majority vote the studies to be pursued, and which of said text-books so filed shall be used in the schools under its control: but no text-books so adopted shall be changed, altered, or revised, nor shall any other text-book be substituted therefor for five years after the date of the selection and adoption thereof without the consent of three-fourths of all the members elected given at a regular meeting; and each board of education shall cause it to be ascertained and at regular meetings in April and August shall determine which and the number of each of said books the schools under its charge shall require until the next regular meetings in April and August; and shall cause an order to be drawn for the amount in favor of the clerk of the board of education, payable out of the contingent fund; and said clerk shall at once order of the publisher said books so agreed upon by the board, and the publisher on the receipt of such order shall ship such books to said clerk without delay, and the clerk shall forthwith examine such books and if found right and in accordance with said order remit the amount to said publisher, and the board of education shall pay all charges for the transportation of such books out of the school contingent fund; but if said boards of education can at any time secure of the publishers books at a price less than the said maximum price it shall be its duty so to do, and may without unnecessary delay make effort to secure such lower price before adopting any particular text-book. Each board of education shall make all necessary provisions and arrangements to place the books so purchased within easy reach of all pupils in their district and for that purpose may make such contracts and take such security as they may deem necessary for the custody, care, and sale of such books and accounting for the proceeds; but not to exceed 10 per cent. of the cost price shall be paid therefor, and said books shall be sold to the pupils of school age in the district at the price paid the publisher with not to exceed 10 per cent. added, and the proceeds of such sale shall be paid into the contingent fund of such district; and whoever receives said books from the board of education for sale as aforesaid to the pupils and fails to account honestly and fully for the same, or for the proceeds, to the board of education when required, shall be guilty of embezzlement and punished accordingly: Provided, however, boards of education may contract with local retail dealers to furnish said books at prices above specified, the said board being still responsible to the publishers for all books purchased by the said board of education. And when pupils remove from any district, and have text-books of the kind adopted in such district, and not being of the kind adopted in the district to which they remove, and wish to dispose of the same, the board of the district from which they remove, when requested, shall purchase the same at the fair value thereof and resell the same as other books; and nothing in this Act shall prevent the board of education from furnishing free books to pupils as provided by law.

Each board of education may furnish the necessary school books free of charge to enable the parent or guardian, without expense therefor, to comply with the requirements of the compulsory education law, the same to be paid for out of the contingent fund; but such pupils as are already wholly or in part supplied with necessary school books shall be supplied free of charge only as other or new books are needed, and all school books furnished as herein provided shall be considered and be the property of the district and loaned to the pupils on such terms and conditions as each board may prescribe.

Oregon.

In January every four years the Governor shall appoint, from the different sections of the State, a board of five text-book commissioners, who shall meet at the State Capitol the second Monday in July every six years (and other times at the call of the Chairman or the Governor), continue in session not more than fifteen days, and adopt text-books covering all branches specified in the courses of study prepared by the State Board of Education, which books shall be used in the Public Schools of the State for six years. Four members shall constitute a quorum; at least three votes shall be necessary for the choice of any text-book; sessions shall be public, all votes viva voce, and the vote of each member shall be recorded in the Board minutes. Commissioners shall receive $100 for attendance at each meeting, with 10 cents for each mile travelled going and coming.

In February every six years the State Superintendent shall mail circulars to all the leading text-book publishers containing data necessary to the submittal of bids. When text-books have been adopted by said Commissioners, they shall report the same, giving title of each book, date of copyright and prices (exchange, introductory, and retail) to the State Board of Education, who shall execute a contract in triplicate, requiring each publisher whose book or books shall have been adopted to maintain at least one depository in each county (at places designated by State Board of Education), where books shall be sold or exchanged at prices named in bids, and contracts shall be secured by bond in such sum and with two such sureties as, may be approved by said State Board of Education.

In August every six years the State Superintendent shall issue a circular giving data concerning books adopted by said text-book Board, and send same to each County Superintendent in sufficient quantities that every school officer shall have a copy.

In any district where a High School is maintained, the Board of School Directors shall, in July every six years, adopt text-books for any branch of study added by them to the branches specified in the State High School course, but no book shall be substituted, directly or indirectly, for one specifiled in said State course. The same provisions regarding voting, contracts, etc., specified in connection with the State Board apply similarly to said District Boards.

Pennsylvania.

No series of text-books shall be adopted in any School District unless by a vote of a majority of the whole number of the directors or controllers, and their votes shall be recorded by name; nor shall any text-books be changed until three years after their adoption. The Board shall purchase text-books and other necessary supplies for the schools as the occasion demands, and such books and supplies shall be furnished free of cost to the pupils, subject to regulations.

Rhode Island.

The School Committee of every city and town shall purchase, at the expense of such city or town, text-books and other school supplies used in the Public Schools, and said text-books and supplies shall be loaned to the pupils free of charge, subject to the rules and regulations prescribed by the committee.

A change may be made in the school books in the Public Schools of any town by a vote of two-thirds of the whole committee, provided that no change be made in any text-book in a town oftener than once in three years, unless by the consent of the State Board of Education.

The sum of $4,000 shall be annually appropriated for the purchase of Dictionaries, Encyclopedias, and other works of reference, Maps, Globes, and other apparatus, to be distributed to towns or districts making an appropriation for the same purpose, each town to receive not more than $200 if not divided into districts, districts to receive not more than $20, provided they have raised at least an equal sum.

South Carolina.

It shall be the duty of the State board of Education to prescribe and to enforce as far as practicable the use of a uniform series of text-books in the free public schools of the State, to enter into an agreement with the publishers of the books prescribed, fixing the period of prescription, the price above which the books shall not be retailed during said period, and a rate of discount at not less than which the books shall be furnished to the retail dealers. Board may require contracting publishers to establish one or more depositories in each county, at places to be designated by board; publishers shall give bond in a sum of not more than $5,000 with a penalty of $25 for each violation of the agreement, such bond to be approved by the attorney-General. State board shall not have power to change a book within five years of the date of its adoption without permission of the General Assembly, except for violation of agreement by the publisher. No teacher shall be allowed to use any book not so prescribed except by written consent of the State board. Whenever it shall appear to trustees that any patron of their school is unable by reason of poverty to purchase the necessary books for his or her children, said trustees may purchase such books and loan same to such children under such regulations as trustees may prescribe, the sum thus expended not to exceed 5 per cent. of the school fund of the district for any year.

South Dakota.

The county superintendent, the president of the board of education of all cities or towns, the county auditor, the county attorney, the board of county commissioners, their successors in office, and one person from each commissioner's district who shall be selected by the members of the school boards of such commissioner's district present at a meeting to be called by the county superintendent, shall constitute the county board of education of each county in this State for the purpose of selecting and adopting all the text-books needed for use in the public schools in the county. The county superintendent shall in all cases be chairman of the county board of education, and the county auditor, secretary, and a majority of said board shall constitute a quorum for the transaction of business.

The county board of education shall meet at the office of the country superintendent of each county of the State on the second Tuesday of June, 1907, and every five years thereafter, and select and adopt a complete series of text-books to be used in the schools of the county: Provided, That the boards in cities and towns may adopt additional books for higher classes in their schools. The county board of education shall advertise for twenty days in a newspaper published in each county that at a time and place named in said notice said board will receive sealed bids for furnishing school books to the pupils of all public schools in the county for a term of five years.

Tennessee.

The Governor and State superintendent, together with three members of the State board of education, to be named by the Governor, constitute a text-book commission, whose duty it is to adopt books for use in all the public schools of the State for a period of five years. Such books shall be used to the exclusion of all others, violation of which is punishable by fine of not less than $10 nor more than $50.

Vermont.

The school board of each town, city or graded school district shall furnish at public expense all appliances, supplies, and text-books used in the studies enumerated, and may furnish text-books on secondary school subjects.

Virginia.

The State board shall select text-books, exercising its discretion as to books suitable for cities and counties, respectively. No book (except United States histories) may be changed inside four years. District boards shall decide what pupils shall be entitled to receive text-books free of charge owing to the poverty of their parents.

Washington.

In each district of the first class (*i.e.*, one maintaining a high school with not less than a two years' course of study) there shall be a text-book commission composed of five persons, namely, the city superintendent (or, if there be none, the principal of the high school) as *ex officio* chairman, and two members of the city board of education or district board of directors, and two teachers teaching in the district, to be designated by such city or district board for a term of five years. Text-books shall be selected by said commission covering the course of study issued by the State superintendent for such schools, together with any books supplementary or additional thereto which may be deemed necessary, and such books when adopted shall continue in use for three years and until displaced by order of the commission.

In each county containing any school district of the second class (*i.e.*, one not maintaining a high school) there shall be a county board of education composed of five members, namely, the county superintendent as *ex officio* president and two teachers and two citizen taxpayers of the county, to be designated by the county commissioners for a term of four years. The State superintendent shall prescribe a uniform course of study for all schools of the second class, and each county board shall adopt books covering the same and may adopt any books additional or supplementary thereto when

deemed necessary, which books shall continue in use for five years and until displaced by order of the said county board. A second class district lying in two or more counties shall be under the jurisdiction of the oldest county.

Each member of the text-book commission of a first class district shall receive $3 a day as compensation while so employed, and each member of a county board 10 cents per mile travelled in attending meetings of the board. The commission and board shall advertise by newspaper for proposals to furnish books, which proposals shall state an exchange, a wholesale, and a retail price at which such books will be furnished. A sample copy of each book contracted for shall be deposited by the publisher with the State superintendent.

West Virginia.

For the purpose of selecting text-books for use in the free schools of the State there is established in every county a school-book board, composed of the county superintendent, who is *ex officio* secretary, and eight other respectable citizens, at least four of whom shall be freeholders and not school teachers, and at least three of whom shall be teachers holding a No. 1 certificate and engaged in teaching. The said eight persons are appointed by the county court, and not more than five shall belong to the same political party. They hold office for four years, and all contracts are made for a period of five years. Boards of education are authorized, at their option, to purchase and supply to the pupils of their district all necessary text-books free of charge.

Wisconsin.

When a school district is newly organized the board may make the first selection of text-books. No second selection can, however, be made by the board unless first authorized by a majority vote of the electors at an annual meeting, unless the district has voted to furnish text-books free. In such cases the district board is empowered to adopt new text-books at any time. Under other circumstances no change of text-books can be made until at least three years have expired after adoption.

APPENDIX N.—*ADMISSION OF CANDIDATES TO COLLEGIATE INSTITUTES AND HIGH SCHOOLS.*

ENTRANCE EXAMINATION, June, 1906.

Collegiate Institutes.

	Examined.	Passed.
Aylmer	98	65
Barrie	123	83
Berlin	178	138
Brantford	219	175
Brockville	112	84
Chatham	191	163
Clinton	75	52
Cobourg	81	52
Collingwood	124	72
Galt	161	141
Goderich	70	46
Guelph	145	113
Hamilton	643	461
Ingersoll	98	66
Kingston	210	141
Lindsay	100	73
London	390	315
Morrisburg	71	28
Napanee	97	44
Niagara Falls	85	79
Ottawa	491	377
Orillia	134	103
Owen Sound	181	126
Perth	110	72
Peterborough	166	106
Renfrew	106	73
Ridgetown	69	56
St. Catharines	79	59
St. Mary's	120	76
St. Thomas	176	133
Sarnia	162	97
Seaforth	83	63
Stratford	222	134
Strathroy	112	89
Toronto (Harbord St.)	486	309
" (Jameson Ave.)	235	156
" (Jarvis St.)	394	235
Toronto Junction	150	81
Vankleek Hill	86	50
Whitby	73	59
Windsor	156	120
Woodstock	149	101
Totals	7,211	5,066

High Schools.

	Examined.	Passed.
Alexandria	112	51
Almonte	53	31
Arnprior	74	44
Arthur	70	57
Athens	107	57
Aurora	69	42
Beamsville	38	29
Belleville	193	65
Bowmanville	57	43
Bradford	44	24
Brampton	95	56
Brighton	44	18
Caledonia	44	34
Campbellford	71	42
Carleton Place	59	44
Cayuga	46	29
Chesley	54	42
Colborne	49	39
Cornwall	129	59
Deseronto	58	45
Dundas	55	43
Dunnville	61	41
Dutton	48	33
East Toronto	78	46
Elora	36	27
Essex	46	27
Fergus	74	51
Forest	51	35
Fort William	28	23
Gananoque	62	37
Georgetown	44	28
Glencoe	71	45
Gravenhurst	50	33
Grimsby	41	34
Hagersville	45	31
Harriston	48	26
Hawkesbury	38	23
Iroquois	70	26
Kemptville	55	28
Kenora (Rat Portage)	36	25
Kincardine	56	30
Leamington	59	33
Listowel	92	65
Lucan	91	46
Madoc	48	26
Markham	131	102
Meaford	72	41
Midland	54	38
Mitchell	89	54
Mount Forest	59	32
Newburg	85	51
Newcastle	21	14
Newmarket	51	43
Niagara	28	16
Niagara Falls South	44	34
North Bay	54	22
Norwood	63	38
Oakville	45	26
Omemee	44	22
Orangeville	73	38
Oshawa	99	78
Paris	47	42
Parkhill	98	61
Pembroke	116	54
Petrolea	78	55
Picton	159	89
Plantagenet	51	30
Port Arthur	62	36
Port Dover	30	16
Port Elgin	50	36
Port Hope	59	43
Port Perry	51	41
Port Rowan	50	33
Prescott	87	48
Richmond Hill	65	48
Rockland	17	8
Sault Ste. Marie	115	84
Simcoe	89	54
Smith's Falls	75	59
Smithville	27	21

ENTRANCE EXAMINATION,—*Continued.*

High Schools.—Continued.

	Examined.	Passed.
Stirling	34	18
Streetsville	20	11
Sydenham	86	53
Thorold	65	59
Tillsonburg	70	53
Toronto Technical School	53	34
Trenton	67	36
Uxbridge	75	30
Vienna	35	20
Walkerton	73	46
Wardsville	17	13
Waterdown	35	23
Waterford	84	47
Watford	88	62
Welland	52	32
Weston	92	69
Wiarton	64	52
Williamstown	44	25
Wingham	61	53
Totals	6,302	3,956

Other Places.

Aberfoyle	18	15
Acton	31	23
Alliston	84	43
Alvinston	52	17
Ameliasburg	29	17
Amherstburg	55	22
Ancaster	33	21
Angus	26	18
Apsley	5	4
Arkona	26	19
Ashton	15	11
Aultsville	31	8
Avonmore	60	14
Ayr	15	12
Bailieboro	26	20
Bancroft	24	11
Bath	42	20
Beaverton	41	19
Beeton	20	11
Belle River	26	13
Belmont	31	23
Bethany	21	16
Binbrook	24	16
Blackstock	36	20
Blenheim	82	67
Blind River	15	8
Blyth	32	27
Bobcaygeon	36	24
Bolton	44	33
Bothwell	40	30
Bowesville	16	7
Bracebridge	53	33
Brechin	39	26
Bridgeburg	33	28
Brigden	31	10
Bruce Mines	34	13
Brussels	55	44
Burford	31	17
Burgessville	22	15
Burk's Falls	35	19
Burlington	24	18
Burritt's Rapids	13	9
Cannington	45	29
Cardinal	27	17
Carp	48	27
Castleton	17	12
Cataraqui	37	22
Chapleau	10	8
Charleston	26	11
Chatsworth	33	25
Chesterville	71	29
Claremont	25	17
Clifford	25	12
Cobden	36	24
Comber	27	12
Cookstown	54	20
Copper Cliff	9	7
Courtright	43	12
Crediton	24	12
Creemore	31	18
Crosshill	20	17
Cumberland	24	14
Deer Park	18	15
Delhi	64	39
Delta	41	23
Dickinson's Landing	27	8
Dorchester Station	57	40
Drayton	50	25
Dresden	58	48
Drumbo	14	9
Dryden	15	8
Dundalk	50	23
Dungannon	37	22
Durham	86	56
Easton's Corners	15	8
Eganville	76	61
Eglinton	18	9
Elmira	29	27
Elmvale	63	31
Embro	57	36
Emo	14	10
Ennismore	19	9
Erin	57	39
Exeter	68	41
Fenelon Falls	62	35
Finch	58	28
Fingal	57	38
Flesherton	56	24
Florence	42	22
Fordwich	20	15
Fort Frances	7	5
Fournier	22	15
French River	10	2
Galetta	23	14
Glen Allan	10	4
Gore Bay	37	25
Grand Valley	36	28
Guelph Consolidated School	33	21
Haileybury	13	9
Hall's Bridge	11	8
Hanover	41	25
Harrow	24	15
Hastings	15	9
Havelock	17	14
Hensall	31	14
Highgate	34	31
Hillsdale	34	10

ENTRANCE EXAMINATION.—*Continued.*

Other Places.—Continued.

	Examined.	Passed.
Hintonburgh	33	10
Horning's Mills	16	11
Huntsville	48	18
Innerkip	14	5
Irish Creek	20	9
Janetville	8	4
Janeville	16	8
Jarvis	30	23
Keene	31	22
Keewatin	9	5
Kilmaurs	14	5
Kimberly	20	9
Kingsville	30	19
Kintail	22	10
Kirkfield	31	18
Lakefield	66	32
Lanark	64	32
Lancaster	34	12
Laurel	19	4
Lefroy	31	20
Lion's Head	8	6
Little Current	8	4
Little Britain	15	9
London East	153	103
Lucknow	35	27
Magnetawan	8	5
Manitowaning	16	3
Manotick	26	15
Markdale	49	23
Marmora	30	21
Marksville	..	..
Marsville	14	5
Massey Station	16	6
Mattawa	21	15
Maxville	63	34
Merivale	14	5
Merlin	60	37
Merrickville	23	8
Metcalfe	27	14
Mildmay	26	11
Millbrook	40	22
Milton	77	45
Milverton	64	31
Minden	22	7
Moorefield	18	12
Mount Albert	14	10
Mount Hope	30	16
Mount Pleasant	25	11
Mountain Station	15	8
Neustadt	12	7
Newboro'	29	16
New Hamburg	18	17
North Augusta	9	8
North Gower	22	12
North Lancaster	30	10
Norwich	33	15
Oakwood	16	12
Oil Springs	43	27
Orono	16	11
Osgoode Station	6	4
Ottawa, East	5	2
Ottawa, South	29	20
Otterville	14	11
Paisley	44	28
Pakenham	16	8
Palmerston	26	21
Parry Sound	65	29
Pelham, S. S. No. 2	29	25
Penetanguishene	41	37
Plattsville	25	14
Port Colborne	47	36
Port Dalhousie	69	49
Port Stanley	19	12
Powassan	49	24
Princeton	16	6
Queensville	11	6
Ramsayville	23	13
Rainy River	11	6
Randwick	10	8
Richard's Landing	12	3
Richmond	30	16
Rideauville	..	..
Ridgeway	30	24
Ripley	28	14
Rockton	24	18
Rockwood	38	28
Rodney	19	14
Rosemont	12	8
Roseneath	9	4
Russell	26	12
St. George	25	15
St. Helen's	21	12
Sandwich	96	24
Schomberg	29	22
Selkirk	33	22
Sharbot Lake	46	30
Shelburne	60	32
Solina	24	20
Southampton	14	13
South Indian	24	12
South Mountain	25	11
Sparta	22	9
Spencerville	28	12
Springfield	24	11
Stayner	48	36
Stoney Creek	42	30
Strabane	27	16
Stittsville	18	7
Sturgeon Falls	40	22
Sudbury	33	23
Sutton West	40	19
Tamworth	59	29
Tara	27	12
Tavistock	32	13
Taylorville	..	..
Teeswater	31	22
Thamesford	20	17
Thamesville	61	47
Thedford	21	14
Thessalon	19	11
Thornbury	39	21
Thorndale	35	21
Tilbury	50	40
Tiverton	37	19
Toronto (De La Salle Inst.)	117	76
Tottenham	48	29
Tweed	35	23
Uppergrove	39	26
Varna	24	17
Vernon	12	4
Wallaceburg	57	47
Warkworth	36	26

ENTRANCE EXAMINATION.—*Concluded.*

Other Places.—Concluded.

	Examined.	Passed.
Waubaushene	47	18
Webbwood	18	9
Wellandport	14	7
Wellington	24	15
West Lorne	29	22
West Osgoode	6	4
Westport Separate School	36	20
White River	9	4
Wheatley	19	17
Wilkesport	29	15
Winchester	91	36
Wolfe Island	40	24
Woodbridge	22	10
Woodville	24	8
Wooler	31	12
Wroxeter	14	12
Wyoming	28	17
Zephyr	20	12
Zurich	30	15
Totals	8,197	4,797

Summary.

Collegiate Institutes	7,211	5,066
High Schools	6,302	3,956
Other Places	8,197	4,797
Grand Totals, 1906	21,710	13,819
Comparison with June, 1905.		
Increases	1,415	388

END OF PART I.

REPORT

OF THE

Minister of Education

Province of Ontario

FOR THE YEAR

1906

PART II

PRINTED BY ORDER OF
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REPORT

OF THE

MINISTER OF EDUCATION

For the Year 1906

PART II.

APPENDIX O.—REPORT OF INSPECTOR OF TECHNICAL EDUCATION.

Hon. R. A. Pyne, M.D., M.P.P., LL.D.,
Minister of Education,
Education Department, Toronto.

Sir,—I have the honour to submit herewith my Sixth Annual Report on Manual Training, Household Science, Art Instruction and Technical Education as carried on in the schools of the Province during the year ending December 31st, 1906.

In response to many requests for information on these subjects, from various educational authorities, a series of illustrated lectures was organized and delivered during the first four months of the year. Photographs of schools, work and equipments, illustrating technical and industrial work from the kindergarten to those monuments of adaptability and organization—the Technical High Schools of Germany,—were obtained from England, France, Germany, Sweden, Ontario, United States and Japan and from these, lantern slides were made.

Lectures were given in the following, amongst other places: Newmarket, Bradford, Collingwood, Meaford, Barrie, Orillia, Gravenhurst, North Bay, Hamilton, Dundas, Paris, Galt, Woodstock, London, Ingersoll, Toronto, St. Thomas, Glencoe, Petrolea, Alvinston, Parkhill, St. Mary's, Mitchell, Seaforth, Sarnia, Windsor, Essex, Mount Forest, Orangeville, Owen Sound, Almonte, Arnprior, Belleville, Norwood, Oshawa, Lindsay, and Ottawa. They were with one or two exceptions largely attended and hearty appreciation was invariably expressed of the efforts being made by the Education Department to afford information on these newer developments of educational effort. A discussion generally followed each lecture, many questions being asked and answered. The pictures shown were a revelation to the majority of our people of the efforts other countries are making to educate for industrial, commercial and professional occupations. One of the main points insisted upon was that the benefits of Technical Education could not be secured without the expenditure of a sufficient amount of money on properly qualified teachers, suitable buildings and efficient equipment, and a general willingness was expressed that this money should be spent. The applications for these lectures were far greater than could possibly be granted during the year and some of them had to be postponed till 1907, when I shall be able to visit places that had to be omitted.

The method of showing what other countries and other parts of our own Province are doing proved remarkably successful. A good photograph is far more eloquent and convincing than mere description, however vivid and detailed. The field for the use of lantern slides in this and other branches of an educational campaign is illimitable. The work of an Education Depart-

Lacquer Ware Laboratory, Tokyo Higher Technical School.

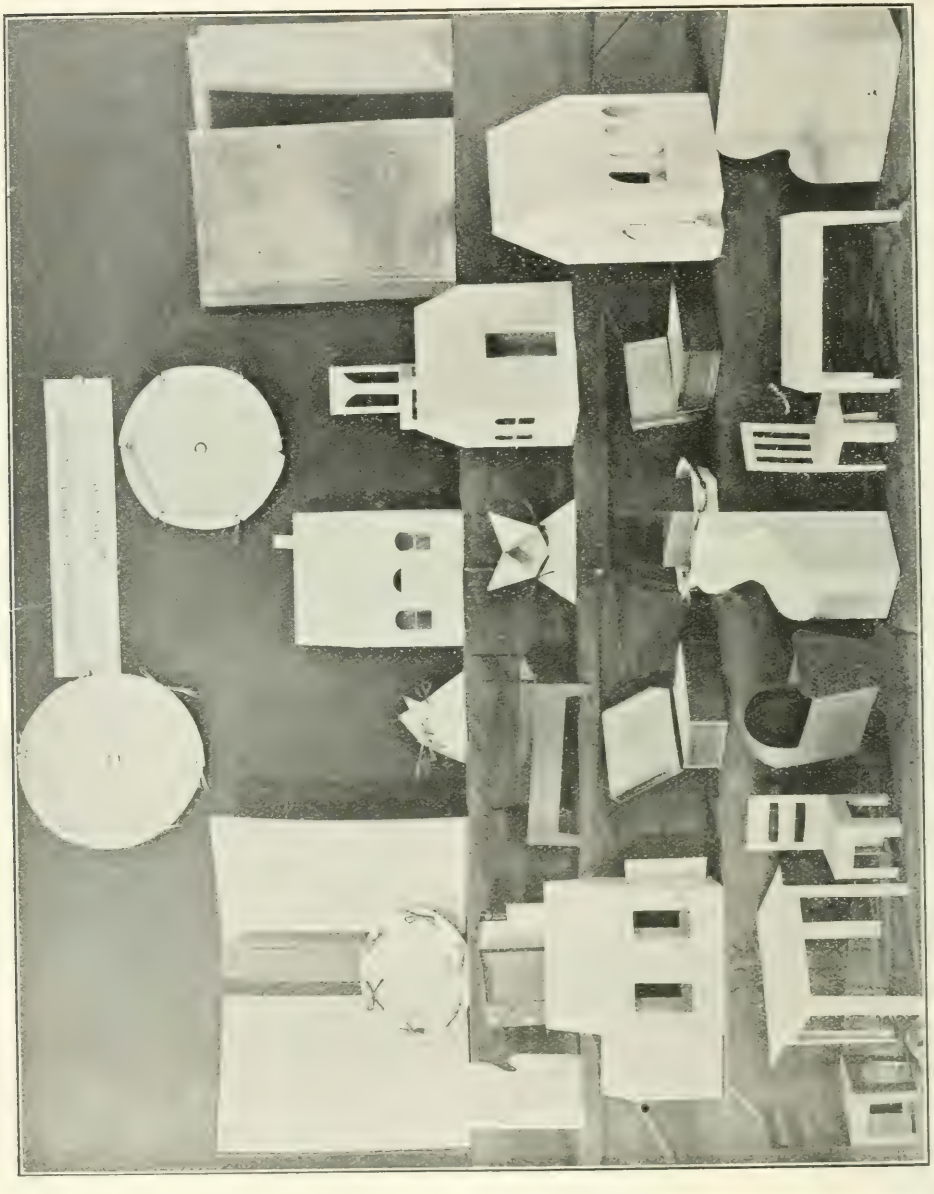
ment should not be, and can not be, restricted to educating the children. The parents and the people need information regarding the work and aims of the Department. An up-to-date business house spares no pains in order to acquaint the people with its products, and I fail to see that it is not the business of the Education Department to keep the public acquainted with the newer developments of educational thought and progress. Ontario possesses

a people second to none in foresight and intelligence, and when it is once shown that the changes proposed and introduced mean progress, all opposition ceases and opponents become advocates. No more effective means of giving this information could possibly be devised than the method of "instruction by pictorial or graphic reproduction." The New York State Education Department has probably made more effective use of this method than any other authority. About one year ago the Commissioner of Education organized the "Division of Visual Instruction," unifying under one head the work previously carried on by the American Museum of Natural History and the University of the State of New York. Under the regulations now framed a

Technical High School, Charlottenburg, Germany.

vast number of illustrations are open to all schools, institutions, and organizations in the State at virtually no cost whatever, the only restrictions in their use being that these slides must neither be used for other than educational purposes, nor upon any occasion at which an admission fee is charged or a collection of any kind taken. The State is now in possession of nearly 24,000 negatives, including re-productions of natural scenery, historic places, famous buildings, manners and customs of peoples, physical phenomena, etc., comprising probably the finest collection of negatives extant and undoubtedly the only collection used exclusively for educational lectures. In the City of New York, 6,000 free lectures are being given during the winter and the great majority of them are illustrated by lantern slides.

There should be established in connection with the Department a collection of lantern slides, illustrating educational work of every description. These should be divided into sets, each accompanied by an explanatory pam-



Work in paper and cardboard suitable for primary grades, done by students of Toronto Normal School.

phlet and these sets circulated under certain conditions throughout the Province. Many Collegiate Institutes possess a lantern which could be used and an assembly hall quite suitable for the purpose of these public lectures.

Constructive Work.

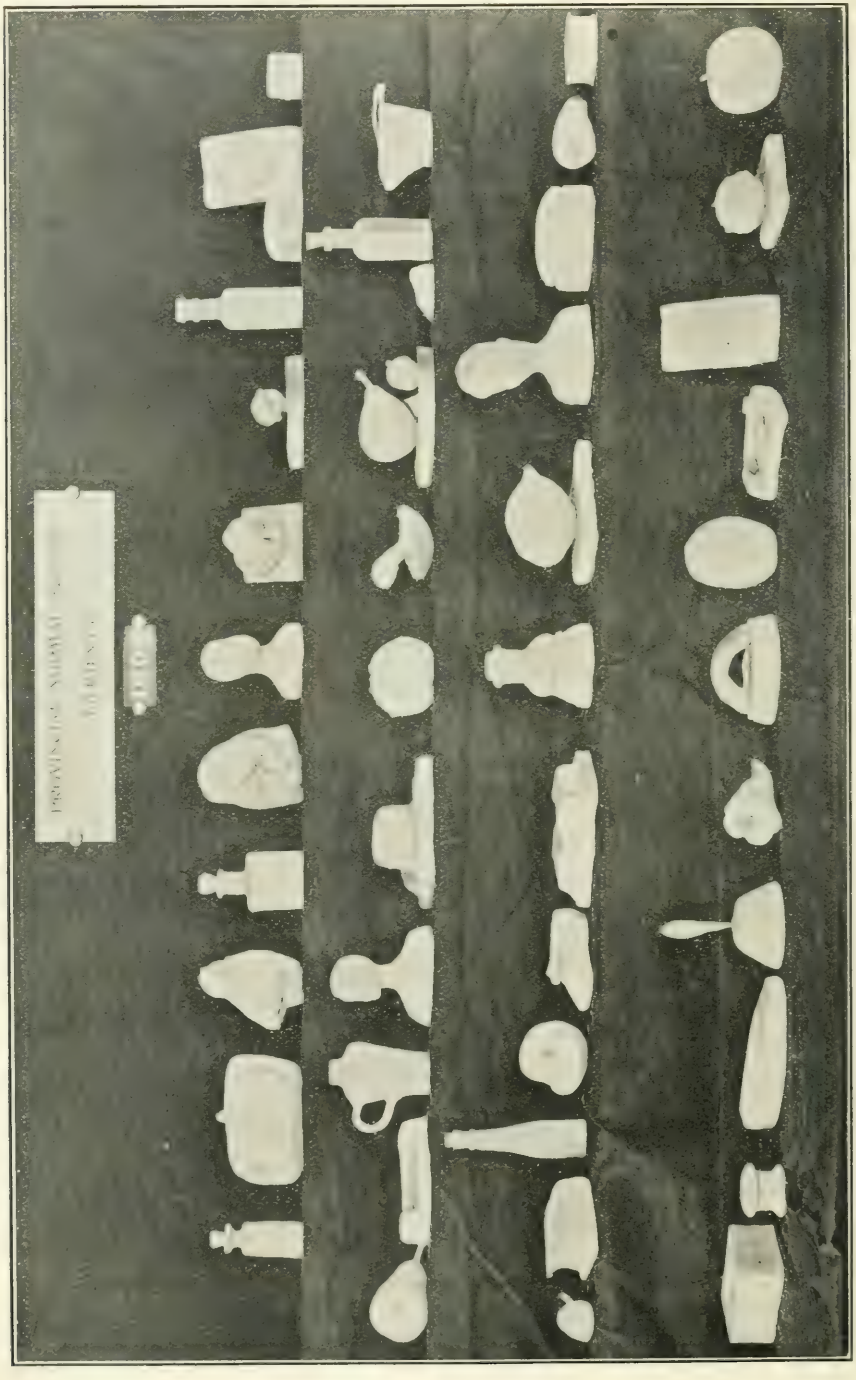
The constructive work being done in the primary grades is rapidly growing in usefulness and popularity, as its aims and objects are being understood by the parents, and its scope appreciated by the teacher. Trustees are becoming more willing to vote the small sums necessary to carry it on, and wherever introduced with moderation and tact much good is accomplished. The help that constructive work can be made to the other subjects in the curriculum is, however, not yet fully understood. It is too often looked upon as an entirely new subject having no relation to others, and when introduced in this spirit, though perhaps some good is accomplished, probably the time could be better spent.

Every student now leaving the Normal Schools is well prepared to carry on this elementary manual training, having had a brief but thorough training in the use of simple tools and materials. Our Normal Schools are well equipped for carrying on work of this kind, but I sometimes fear that the excellence of the equipment provided acts, in some cases, as a deterrent rather than as a stimulus. I am continually meeting teachers who hesitate to introduce this work on the grounds that the material is not to be easily obtained, and that the equipment is too expensive for the ordinary school.

It is not always the teacher with the most elaborate equipment, and the most generous supply of material that accomplishes the best work. The art of makeshift is a useful study, and the resourceful teacher who is constantly on the look out for ways and means, and material is rarely at a loss.

One teacher who found it difficult to obtain just what she required, begged a number of wall paper sample books, and from these her pupils made an excellent series of useful and instructive objects. Another teacher did the same from the covers of old copy and exercise books. These instances which could be multiplied are simply mentioned to show that inability to obtain the usual material employed need be no barrier to the introduction of constructive work. Work of this character, in the first three grades, is usually under the control of the regular teacher, and is carried on in the ordinary class room at a very slight expense. It usually assumes some form of modelling in clay, construction in paper and cardboard, sewing and weaving with various materials, whittling in thin wood, or work in bent iron. No figures are yet available as to the cost of this work in Ontario, but in many places in the United States the cost does not exceed two cents per pupil per year. The work at the present time is very varied in character, depending largely on the capacity, sympathy and ingenuity of the teacher. Clay Modelling is a form of Manual Training that may be carried on in all schools. The material is cheap and abundant, and its possibilities for expression are almost endless. Various substitutes have been used for clay, but most of them have serious disadvantages. The following quotation from the instructions issued by the Manual Training Department of the elementary public Schools of Chicago, may be of use and interest to some of our teachers. "Paper pulp is a substance which any one can easily make and use in place of clay, sand, putty or plaster of Paris for making relief maps, and for modelling. The material costs nothing, and is so clean and pleasant to work, it is a wonder that paper pulp has not been more generally applied in constructive work. To make pulp or papier-mache tear any waste paper (newspaper or writing paper will do) into pieces not more than one inch square. Fill a bucket with these bits of paper and pour over them about a gallon of boiling water. Let the paper soak for five or six hours, and then drain off the excess water. If now the mass of wet paper be worked vigor-

ously with a stick churning it, and thus tearing the bits of paper very fine, you will have at the end of a few minutes an excellent quality of paper pulp."



Models in clay made by the students of Toronto Normal School.

Clay can be purchased, or better still it may be gathered and prepared by teacher and pupils at no cost, and small trouble. The material lies practically at the door of every country school. Choose a place where the subsoil can easily be dug, and unless this be sand or gravel, something can be got from it. A good supply should be dug in dry summer weather, and spread in a shed to become perfectly dry. It should then be crushed with a hammer or rolling pin, and sifted through a fine sieve. A large barrel is now half filled with water, and the dry clay sprinkled into it, stirred up and allowed to settle. If a heavy sandy deposit is found in the barrel, the mass must be stirred once more, and after settling for a short time—three to five minutes—the water with clay in suspension is removed to another vessel, the sandy deposit being thrown away. If the clay on again settling still prove too sandy a second washing may be given with a longer settlement. Some earths will only yield a small quantity of plastic clay, but some may be procured everywhere. The washed clay is now in a liquid creamy condition. A complete subsidence must be allowed, and the clear water poured away. Exposed to sun and air, the clay will be gradually dried until it becomes of the proper consistency when it should be made up into balls, and

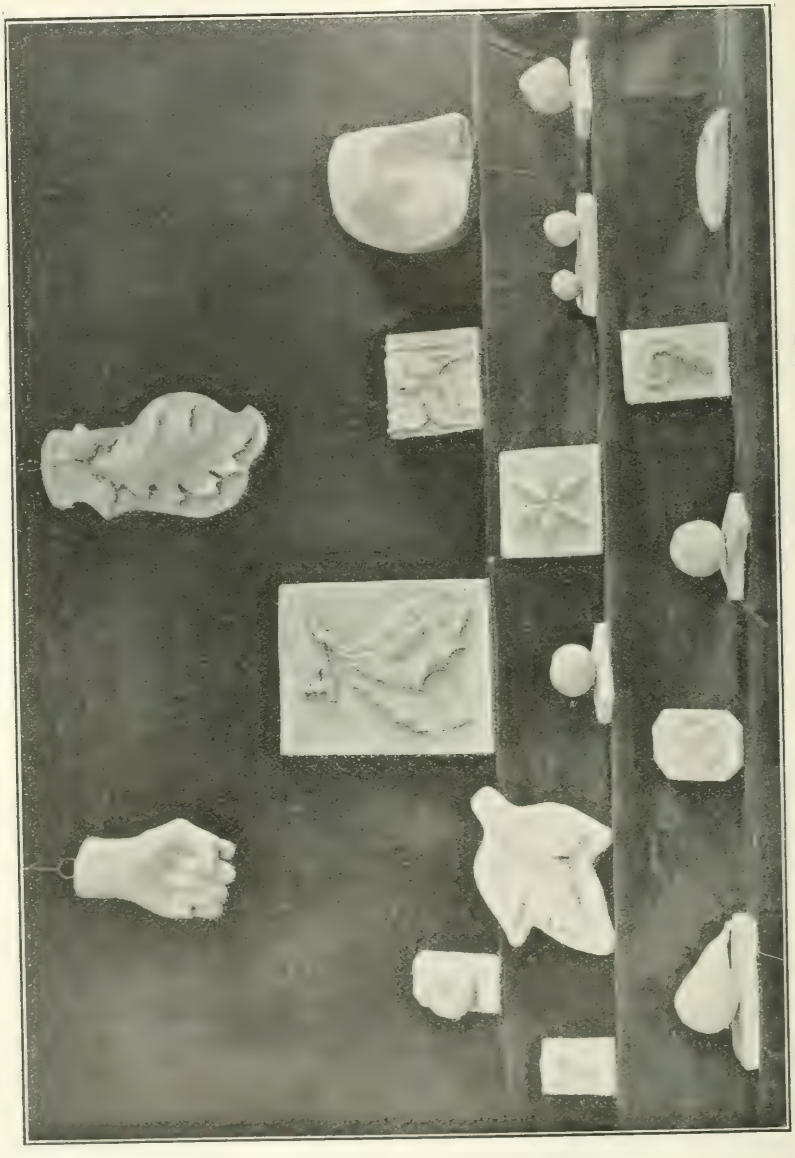
Model in clay made by student of Toronto Normal School.

stored for use. Clay improves by keeping, if it is not allowed to become dry. If too hard it should be dried out completely, and treated as new clay by being crushed and sifted. To keep the clay moist, place a few flat stones in a large tub or pickle jar, and add water to half the depth of the stones. On the stones, the clay is set so that it is in a moist atmosphere, but not in the water. The tub should be fitted with a good cover. The clay may also be kept in good condition by being kept covered with a damp cloth. The above plan of obtaining clay is recommended by Professor Charles Binns, Director of New York School of Clay Working and Ceramics.

The ordinary school room desk will serve every purpose of clay modelling, if the surface be protected. Slates (either roofing slates or the ordinary framed school slate), a piece of oilcloth, modelling boards, or even a piece of stout manilla paper may be made to serve this purpose. The only tool required is a simple modelling tool, and even this may be dispensed with in the earlier stages of the work. In the Primary grades, natural models, such as are easily obtainable in any district are best, as fruits, vegetables, flowers, leaves, shells, etc. Much of the modelling now done makes little use of objects, the models being more or less original, and imaginative on the part of the child.

Paper and Cardboard Modelling.

Construction in paper is probably the most common form which this work takes in our schools. The equipment necessary is slight: scissors, pencil, rule and paste. In some schools one set of these is provided, and carried

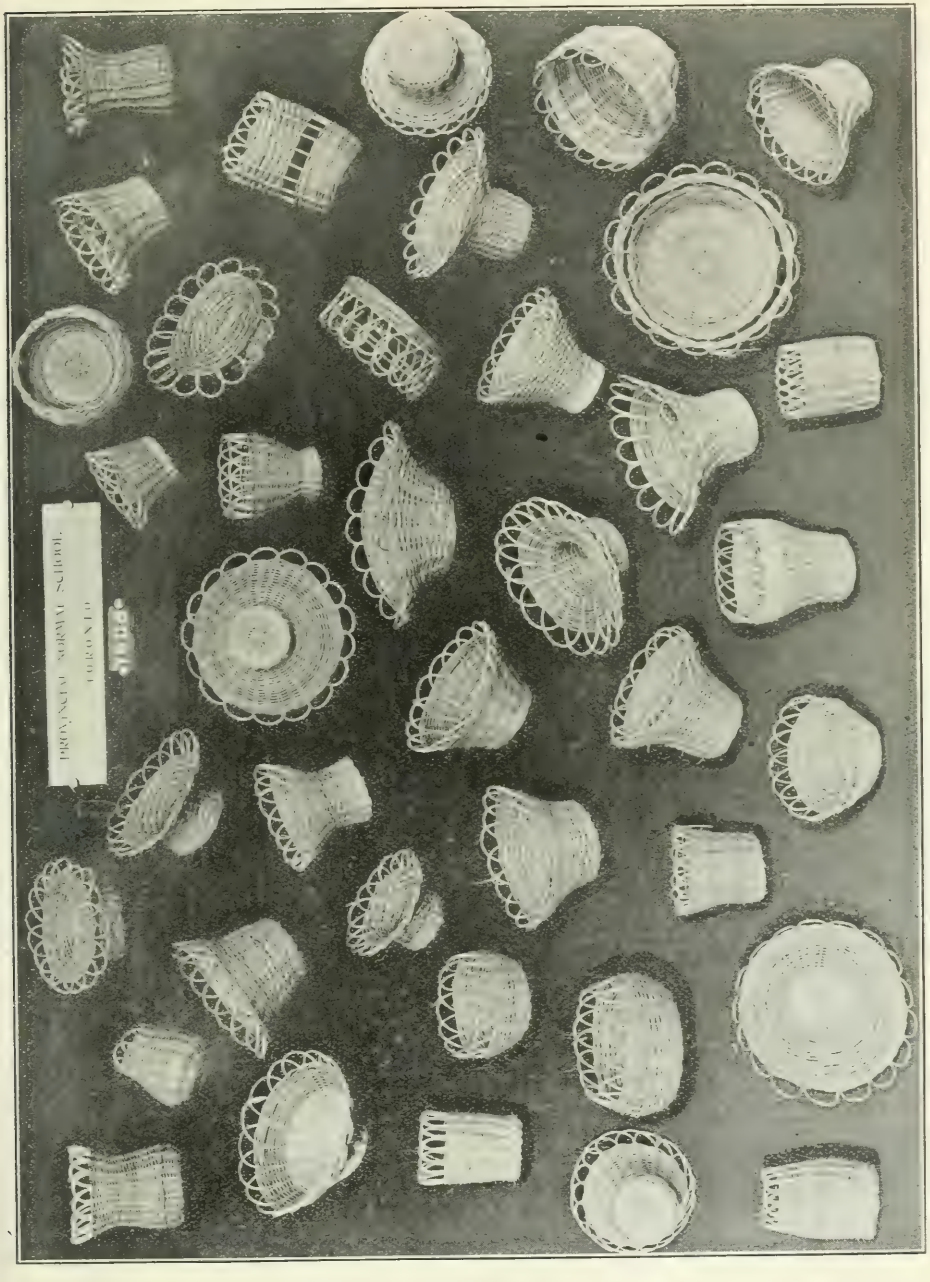


Models in clay made by students at Summer School, Toronto.

from room to room, thus reducing the cost to a very small figure per pupil. Returns from schools in the United States containing over 20,000 pupils give an approximate cost of carrying on constructive work in this medium at six cents per pupil per year.

A great deal of free cutting is done, giving free play to the imaginative faculties of the child, while at the same time training the observation.

Construction in cardboard is a natural development of the work in paper, and is closely related to it. This work generally consists of the mak-



Baskets made by students at Toronto Normal School.

ing of boxes, miniature furniture, miniature houses, frames, calendars, trays, portfolios, etc. A suggested equipment for a class of 30 pupils is as follows:—

30 pairs scissors at $2.00 per dozen	$5 00
30 compasses	3 00
30 rulers	30
3 punches	60
	$8 90

The large paper manufacturers will send samples of various tinted papers and light weight cardboard, suitable for this work, or if these cannot be obtained, any material at hand may be used as previously mentioned.

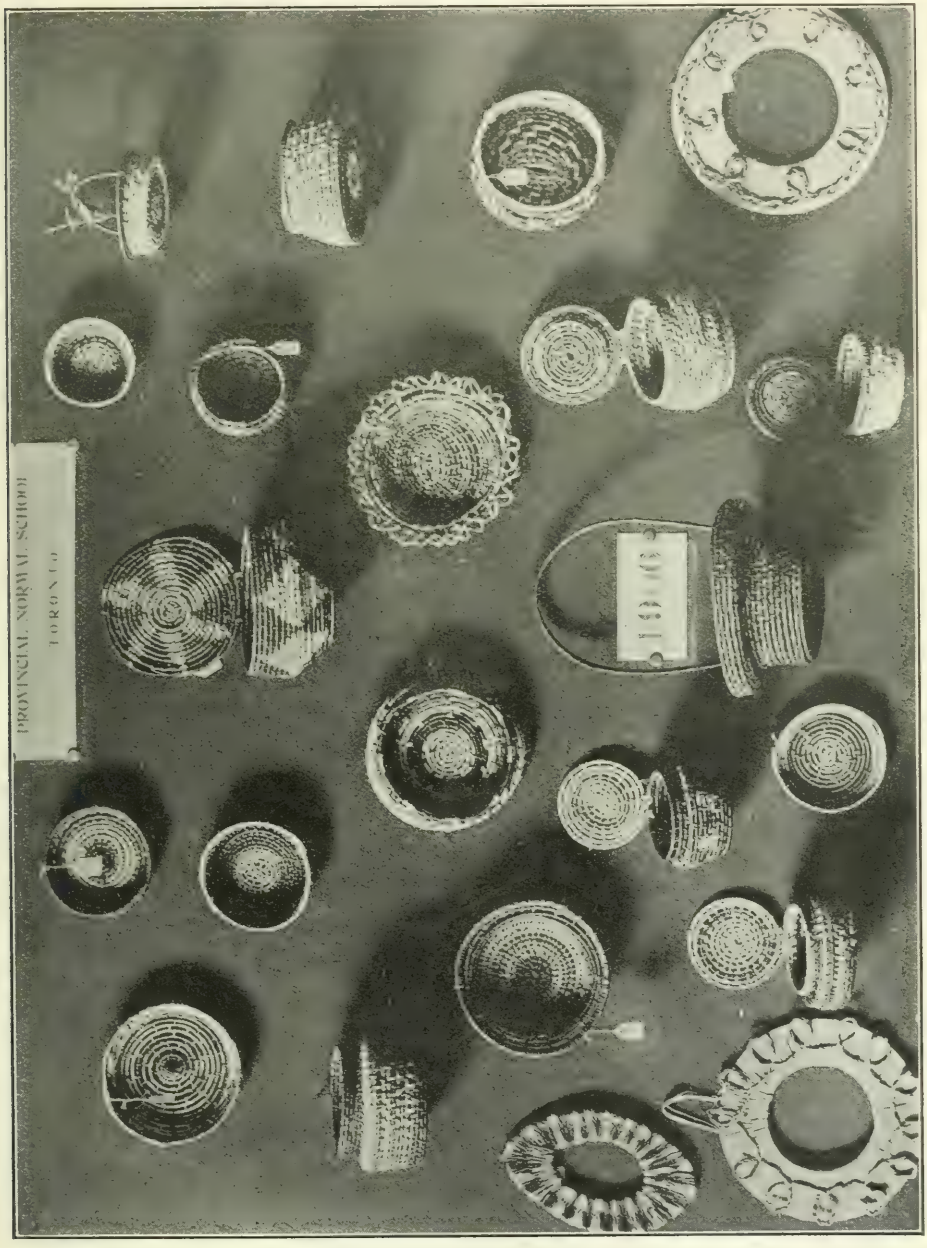
Weaving in various forms and materials, typical of primitive, textile and basketry processes is being introduced into some schools in the lower grades with great success and benefit. The most used materials are strips

Baskets made by students at London Normal School.

of coloured paper, yarn, rags, raffia, grass, rushes and reeds. In one school in the Province, the children gather, dry and prepare their own rushes, afterwards weaving them into mats, etc.

In weaving with yarn, rags, etc., some form of simple loom is used. In its simplest form this may be merely a piece of cardboard with notches cut into either end to hold the warp threads, or it may be a small wooden frame with a row of brads at either end. These looms may be made either in the cardboard modelling lesson, or in the manual training room. The frame of a broken slate makes an excellent loom. Many varieties of looms are upon the market, but it is best to have them made by the children who are to use them. Many materials suitable for this occupation may be gathered in the fields and woods, such as the bull-rush, corn husks, the stem of the maiden hair fern, and numerous long grasses. The cost for sewing work, cord work, and basketry, in the Horace Mann School, New York,

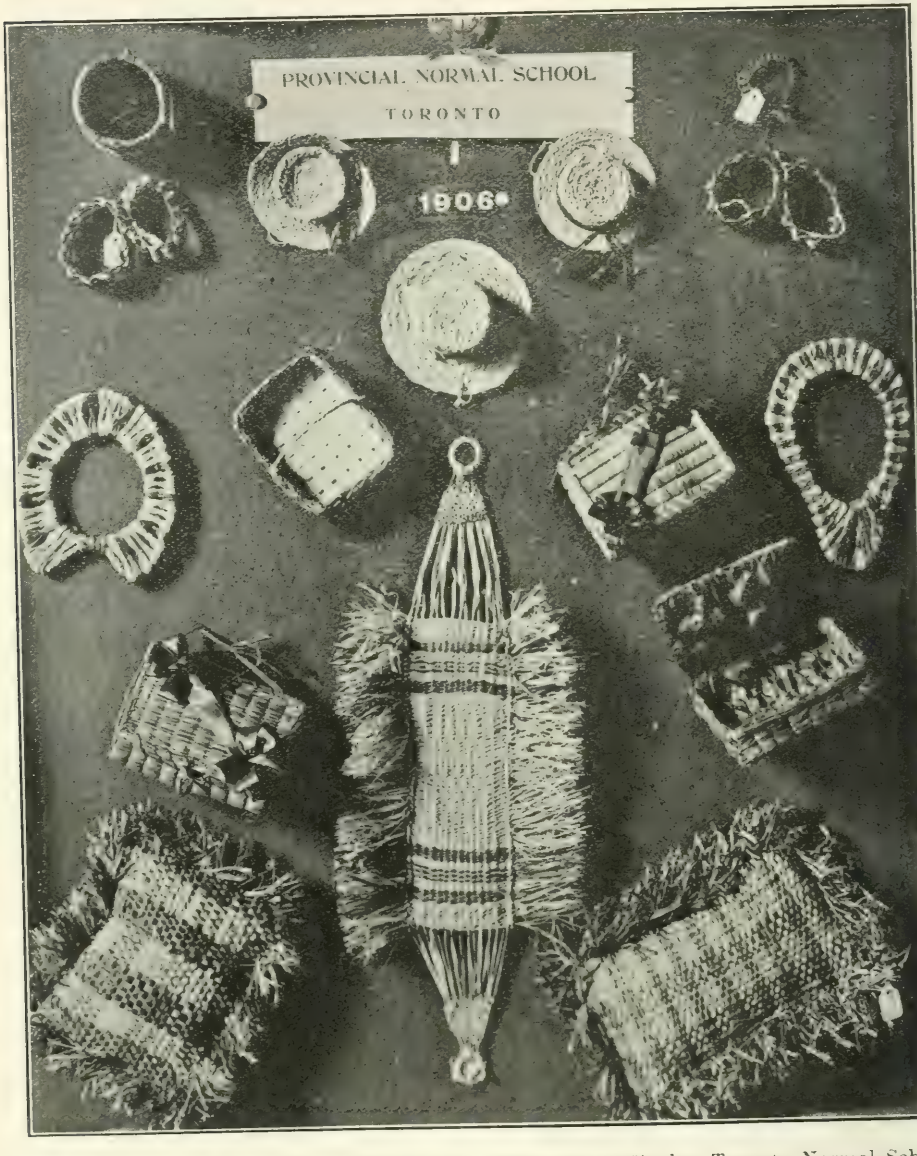
varies from twenty to twenty-five cents per pupil per year. The possibilities of correlating this work with nature study are almost endless, particularly in the matter of dyeing. It is hard to accept the fact that the stains that come from the roots of the yellow dock, the bark of the alder, the foliage of the



Raffia baskets made by students at Toronto Normal School.

cedar, the fronds of the hay scented fern, and the petals of the St. John's wort are as truly vegetable dyes as those that give effect and charm to those masterpieces of colour—Persian rugs; that a bit of raffia, silk or wool can be as artistically coloured by a wayside weed in Canada as it can be in Per-

sia. The Persians have been wise enough to cling to their primitive ways of hand dyeing. Aniline dyes are not allowed in the country. At the Macdonald Institute, Guelph, some useful experiments have been conducted in



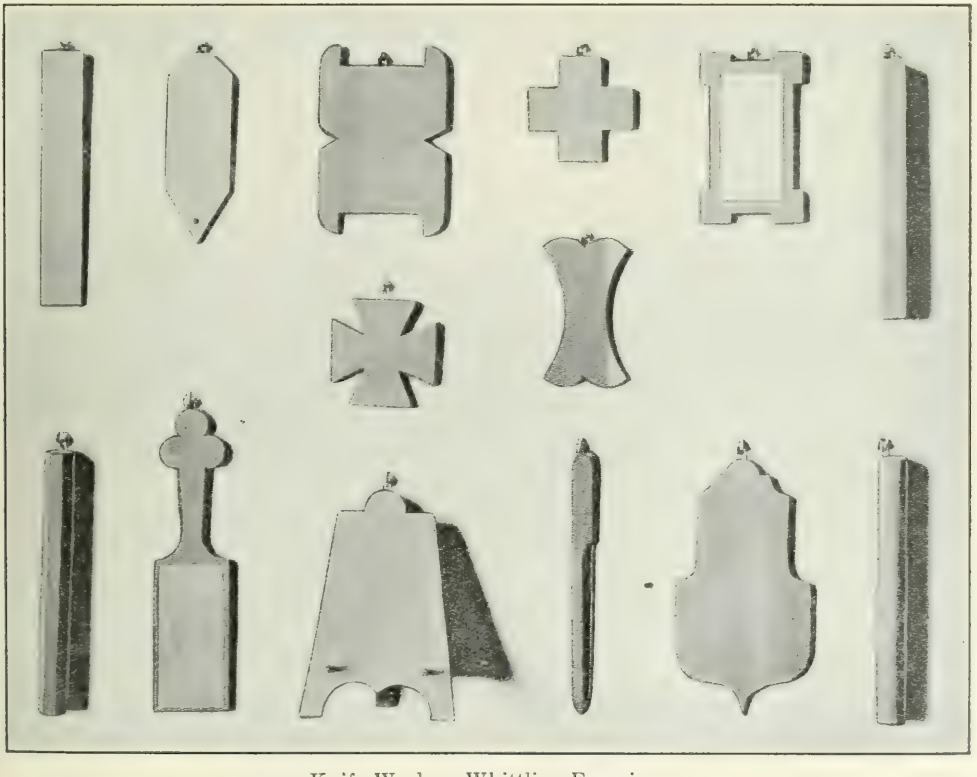
Hammock, hats, frames, cushions, baskets, etc., made from raffia by Toronto Normal School students.

obtaining natural colours from various forms of vegetation, while at Teachers' College, Columbia University, the dyes used in basketry are largely home made. The average rural school is admirably situated for carrying on experiments of this nature.

Raffia Basket.

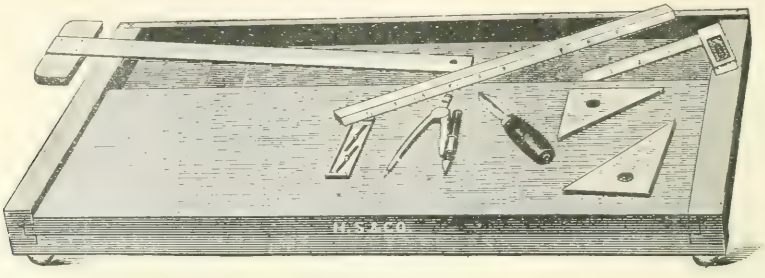
Whittling or Knife Work.

Another useful occupation for the primary grades, and directly leading to the more advanced work of the manual training room is that of whittling or knife work. This is done very effectively in many schools of the United States, but up to the present has not been introduced into Ontario. This.



Knife Work or Whittling Exercises.

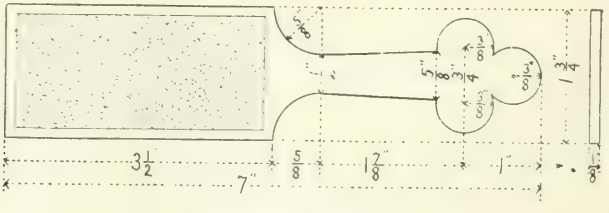
like the work in the materials previously mentioned, can be carried on in the ordinary class room with very few tools, and at little expense. A slab of hard wood or a special tray is provided to protect the desk top. In the primary schools of Denver, Colorado, each pupil is provided with knife, ruler, try square, pencil, eraser, triangle, and compasses, the whole set of excellent quality costing not more than ninety five cents.



Whittling Tray.

If the classes are arranged accordingly, the tools can be made to do duty for several persons, thus still further reducing the individual cost.

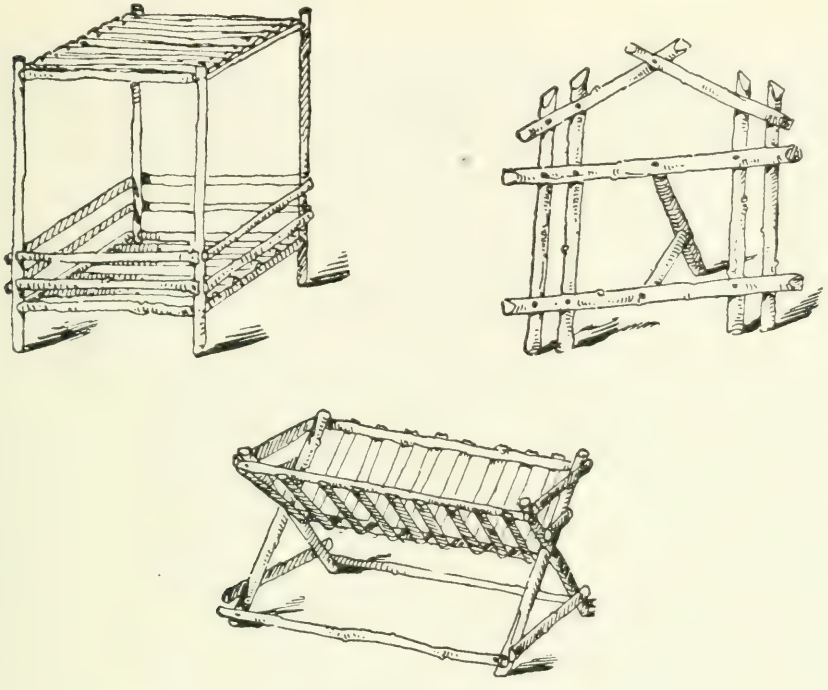
Each pupil prepares a working drawing, and thus obtains some elementary knowledge of mechanical drawing which is the foundation of all the mechanical arts and industries. The best woods to use for whittling are gum wood, basswood, poplar and pine in the order given. Any stout knife will answer, but the best is found to be a fixed single bladed knife. Wood adapted to the simple knife exercises of primary children may be obtained from soft pine dry goods boxes. The material offers abundant opportunity for making simple useful objects that appeal strongly to the interest of the boy or girl. A pencil sharpener interests a child because he can use it, and he learns something about the sandpaper which he glues upon it. A match striker claims his attention, because of its actual utility. The calendar back has a place chosen for it, where it will be always in full view. A picture frame proves full of interest, and great care is taken in its construction. A match-box always has a certain destination, which is usually decided upon before it is half completed.



Specimen Drawing.

Closely connected with this, and sometimes combined with it is work in natural wood, that is twigs just as they are taken from trees and shrubs. The willow, the alder, the hazel, the pine, and various fruit trees all yield suitable material. It is well at first to commence with the softest possible wood, and not to pass to the harder kinds until later, when the hands of the pupil have gained more skill. Twigs with a wide medullary sheath are not suitable for this work as they split easily, and brads do not get a firm grip

in them. The twigs cut from trees and shrubs in the late autumn should be gathered up, left for some time to dry, and then used. A course in this material is largely in use in the schools of Germany, particularly in Berlin and district.



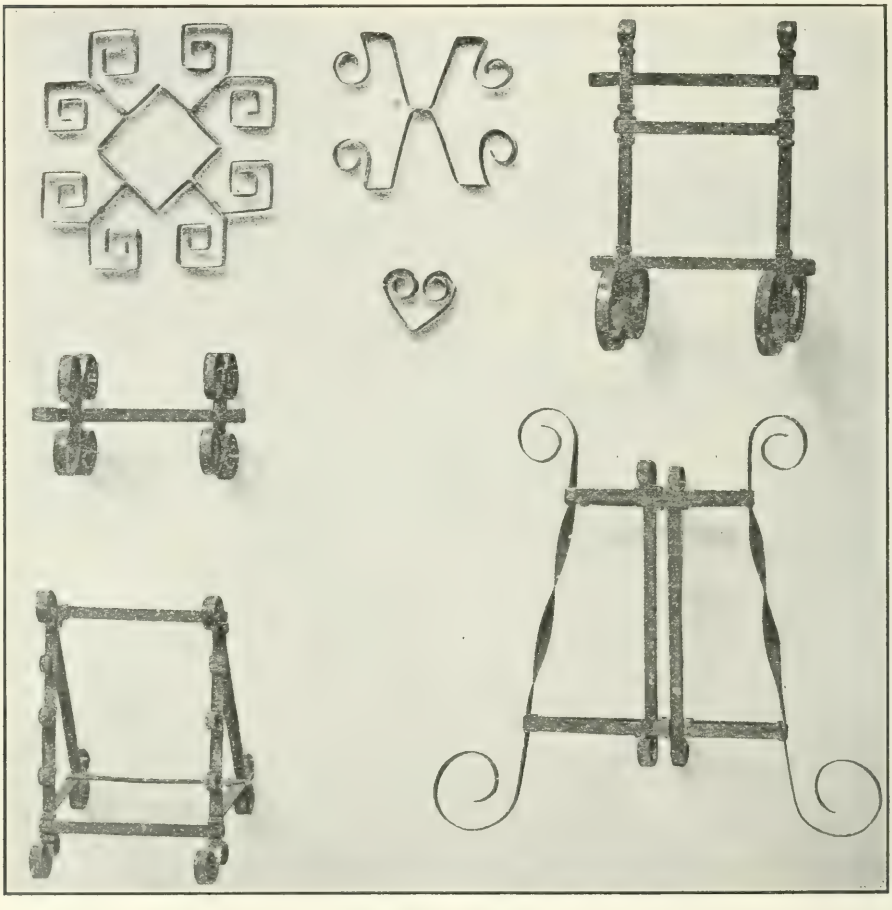
Specimens of Rustic Work.

Bent Iron Work.

Bent iron work is also largely practised in some schools in the United States, and may be carried on in the regular class room. The equipment for a class of thirty pupils need not cost more than $16, while in the Horace Mann School, New York, the cost per pupil does not exceed twenty cents per pupil per year.

The following quotation from an article on "Venetian Iron Work in the School," by the Supervisor of Manual Training, Buffalo, New York, is suggestive of a method of using waste material in increasing the possibilities of "Venetian Iron Work." "The course adopted in the Buffalo Schools has been built up from fragments gathered from the store, the school, the kitchen, in fact from any place where the needs of the case seemed to indicate that an object made of iron or tin would serve a purpose satisfactorily. Teachers have brought ideas. Pupils have in their own experiences found places where the iron work was needed. . . The teacher, who in a few simple models, teaches the fundamental operations, and then calls upon the observation and the inventive talents of the class will not lack suggestions from which she may build a course. Along with the iron, tin may be used as parts of various projects and of course glasses, jardinieres and other receptacles will be brought from home, and will afford an opportunity for designing and making proper supports. Some of the most interesting exercises are

those in which the class takes an object, which has hitherto been considered useless, and by their hand work, create from it, a thing of beauty and usefulness. Broken goblets, baking powder cans, and covers have been reclaimed from the garbage barrel, and have emerged from the hands of our youthful workers as pansy glasses, flower pots or pin trays."

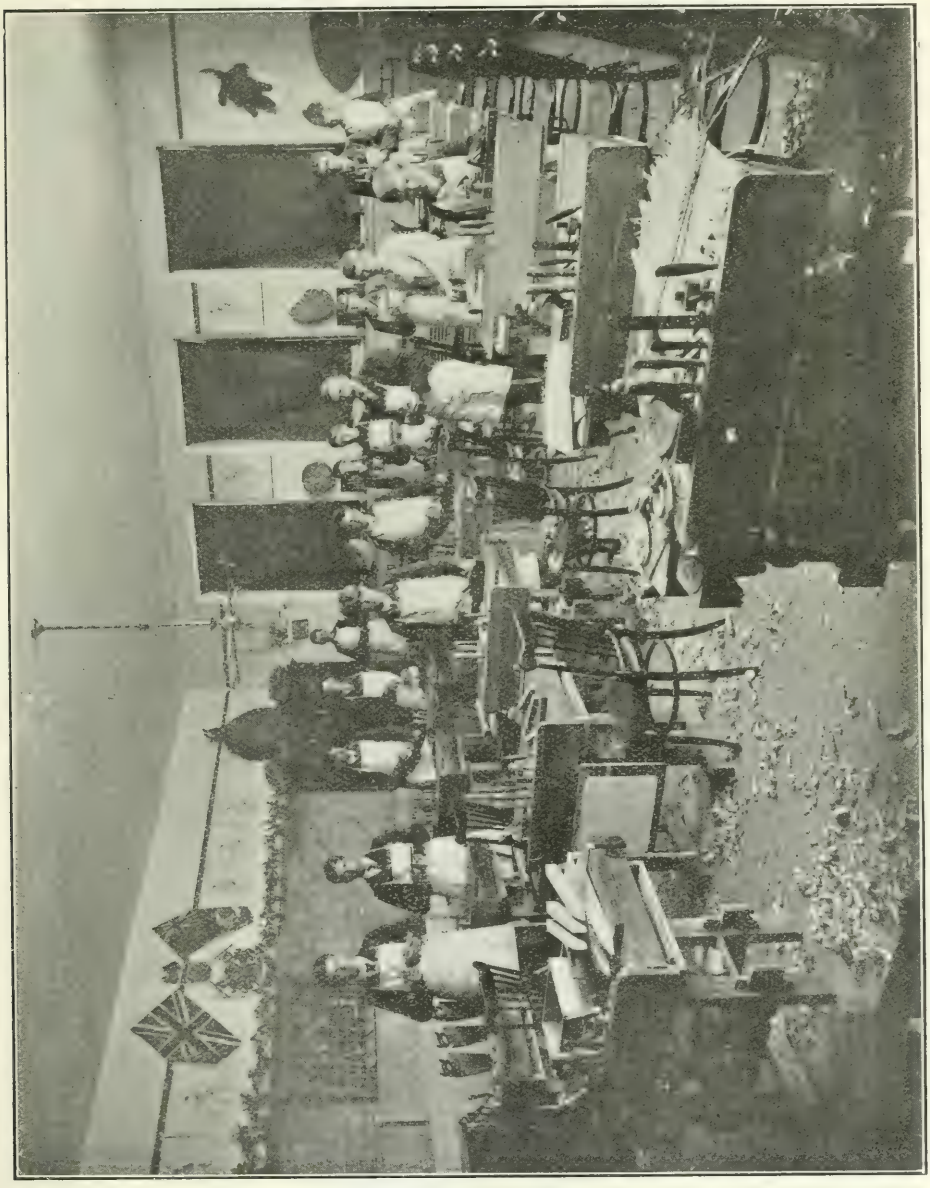


Bent Iron Work.

Various materials have been mentioned in which constructive work has been, and is being carried on in different schools, and the list has by no means been exhausted, but sufficient has been said to show that the resourceful inventive teacher need not be at a standstill for material in which she can find channels for the educational activity of her pupils. Some teachers prefer one material, and some another, and that should be chosen in which it is felt best work could be done. Space would not of course allow of full description of all processes, but any teacher or trustee desiring further information may obtain it on application to myself at the Education Department.

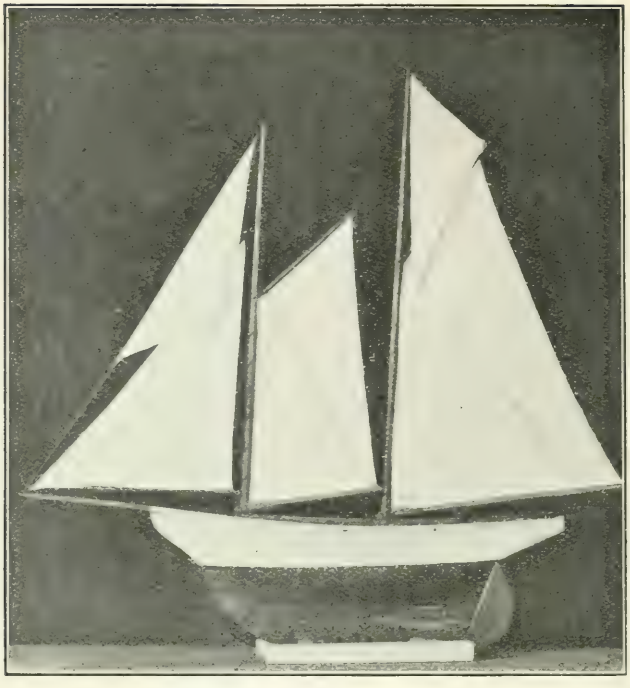
Manual Training.

Fully equipped manual training centres are now in active operation in the following towns and cities: Public School, Guelph; Consolidated School, Guelph; Berlin; Normal Schools, Ottawa, Toronto, London; Normal College, Hamilton; Bolton Street, Cambridge Street, Cartier Street, Elgin Street,

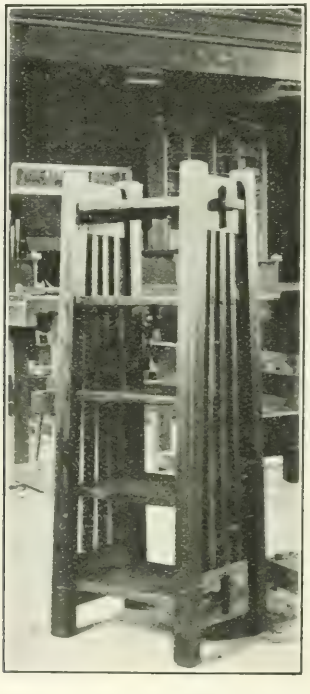


Manual Training Room, Consolidated School, Guelph.

First Avenue, George Street, Glashan School, Slater Street, Wellington Street, Ottawa; Wellesley School, Givens Street School, Lansdowne School, Dufferin School, Queen Alexandra School, Broadview Boys' Institute, Toronto; Cobourg, Kingston, Brockville, Stratford, Ingersoll, Brantford, St.

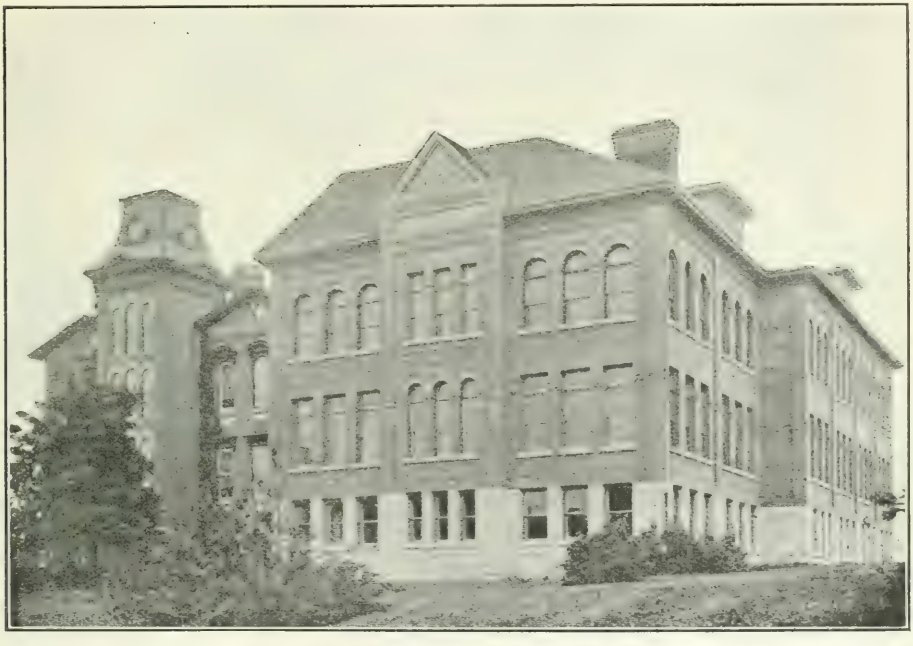


London Public School Work.



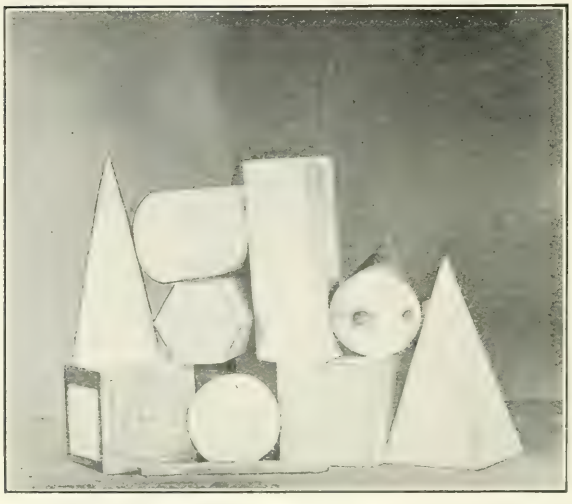
Ingersoll Collegiate Institute Work.

Thomas, Alvinston, Cornwall, Woodstock, Hamilton School of Art, Essex, Renfrew, Macdonald Institute Guelph. Early in 1907 it is expected that such departments will be running in Galt, Owen Sound, Cobourg Public Schools, Rideau Street, Ottawa, Creight Street, Ottawa, and Sault Ste. Marie. Each centre is liberally aided by Government grants and in the majority of them very good work is being done. The equipment for woodwork usually consists of from twenty to twenty-five single benches, each supplied with the necessary tools for individual use, while in addition tools for general use are supplied and kept in convenient racks. In a number of cases the rooms are attractively decorated with models, specimens of timber, charts of trees, etc., all relating to the work carried on. In one or two instances enough attention is not being paid to the appearance of the room. The surroundings in which a boy works have unconsciously a great influence on his character and the quality of the work accomplished. A manual training room should not be regarded as a general lumber room in which to store objects that are thought to be unsightly in the ordinary class room.

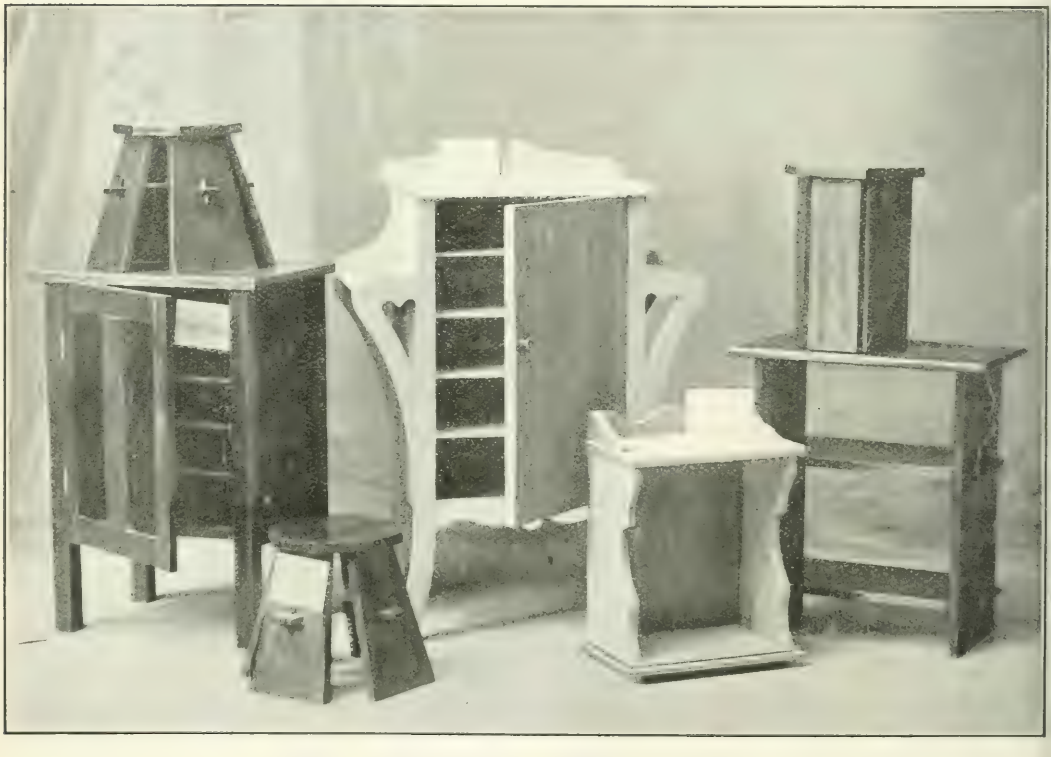


Berlin Collegiate and Technical Institute.

Undoubtedly the best plan in introducing this work is to have it carried on in a separate building distinct from but communicating with the school. This plan has, however, chiefly owing to financial conditions, not been generally followed. Stratford, Brantford and Berlin have erected special buildings which are proving all too small for the growing requirements of the work. Brockville has adapted an old school building which is proving eminently suitable. Ingersoll has hired rooms away from the school, but in every other instance an ordinary school class room has been adapted, and though this plan has some disadvantages it is serving very well. A common practice in the new public school buildings in New York City where only one room is devoted to bench work, is to place the room at the top of the building. The size of the room is, of course, determined by the number of the benches to be installed. A space of thirty feet by forty feet will meet

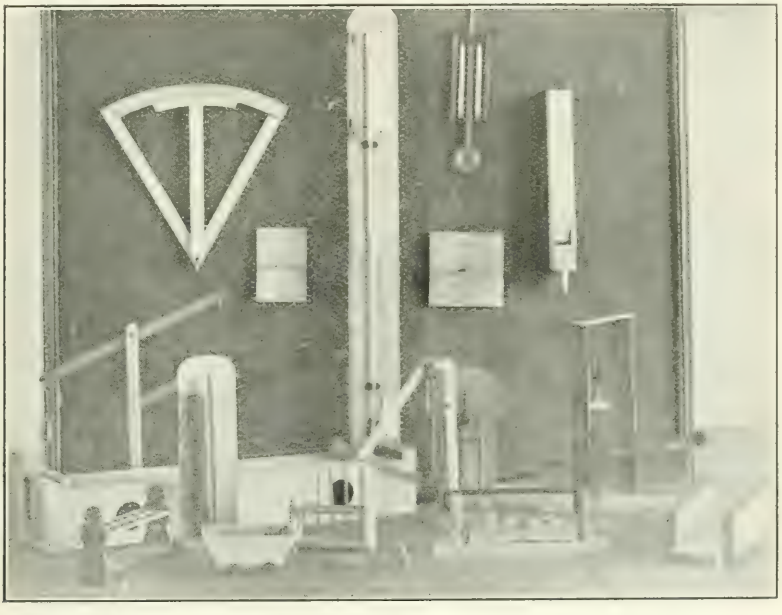


Set of Models made by London Normal students.



Work of boys and girls at Essex High School.

all the requirements for twenty-four benches. Abundant light is absolutely essential for work of this kind and for this reason a corner room is more desirable than one having windows on one side only. Where artificial light is necessary drop lights should be placed on the back left hand corner of each bench as well as elsewhere about the room. It is customary in the best equipped rooms in the United States to set aside a portion of the room for demonstration purposes. This is a practice which, owing to considerations of space, we have unfortunately not been able to follow. It is hoped, however, that as new rooms are erected specifically for manual training purposes provision will be made for this. This demonstration equipment generally consists of seats or benches for the number of pupils in the class, a work bench and set of tools for the teacher and a blackboard of ample dimensions. The seats should be arranged on a raised platform of two or three tiers so

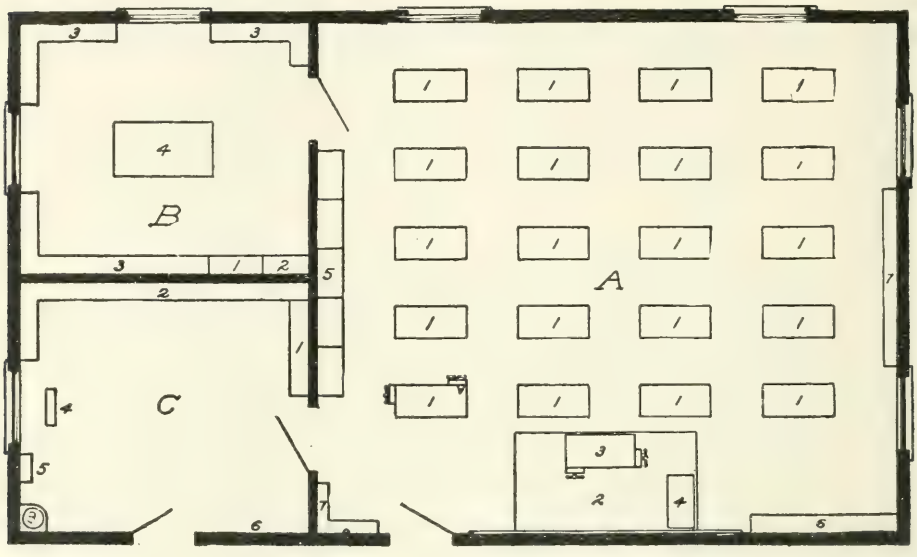


Physical apparatus made by London Normal students.

that each student may have an unobstructed view of the work being done on the teacher's bench. At this bench the teacher performs various operations and manipulations in giving instruction to the class. A departure from this method is seen at the Ethical Culture Schools, New York. For demonstration purposes a room connected with the workshop was taken and fitted up as an ordinary class room, but with the addition of a demonstration bench. A swinging blackboard is fitted into the wall separating the two rooms. When the class passes into the bench room the board is swung about a central pivot and the drawings serve as working drawings for the class at the benches. If necessary the demonstration room can be used as a regular class room.

The rooms being occupied in various parts of the Province are generally lacking in storage accommodation. Though not indispensable, a storage room about fifteen by eighteen feet is highly desirable. In this room can be stored various kinds and sizes of lumber in such manner that any piece required may be readily selected. Pigeon holes or cupboards should also be provided for storing cut up material, hardware and other purposes.

A teacher's room, say eight feet by ten feet, is also a great advantage furnished with desk and cupboards for storing drawings and blue prints, magazines, books, etc.



Suggested plan for Manual Training Room.

Room A. (32 ft. by 28 ft.)

1. Benches.
2. Platform.
3. Demonstration bench.
4. Desk.
5. Pigeon holes.
6. Closet for material.
7. Shelves for general tools.

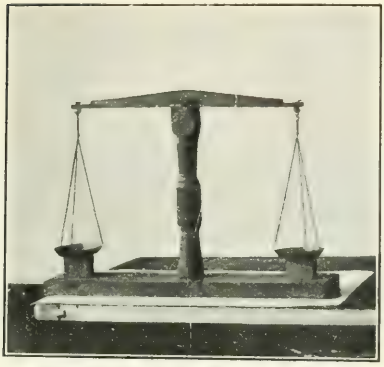
Room B. (16 ft. by 13 ft. 9 in.)

1. Teacher's wardrobe.
2. Bookcase.
3. Shelves with doors.
4. Table.

Room C. (16 ft. by 13 ft. 9 in.)

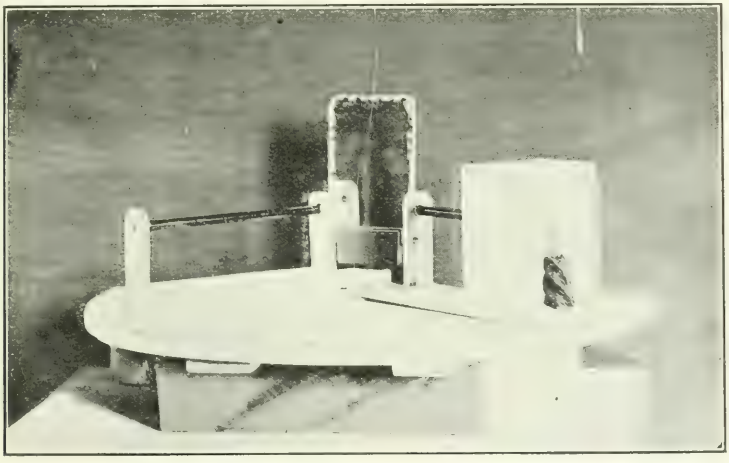
1. Cupboard for material.
2. Shelves for lumber.
3. Washstand.
4. Grindstone.
5. Shelf for oilstone.
6. Hooks for clothing.

After the room has been chosen the next most important part of the equipment is the benches. Many benches are on the market in the United States and one or two firms in Canada manufacture a bench. Unfortunately at present the benches we have had made in Canada (with the exception of those perhaps of one firm) have not stood the test of wear and tear nearly so well as the bench made across the border. Benches are made for one, two or four students, but the consensus of opinion is now almost unanimously in favour of the single bench. A bench fitted with two vises is preferable as there are many operations where the end or tail vise is of great assistance. Wooden or iron vises are employed and each kind possesses advantages. The iron vises are generally known as "quick action," that is, a quarter turn of the handle to the left permits of the jaws being set at any required opening and a return quarter turn clamps the work in place. The most essential feature in a work bench is rigidity. The cost of main-

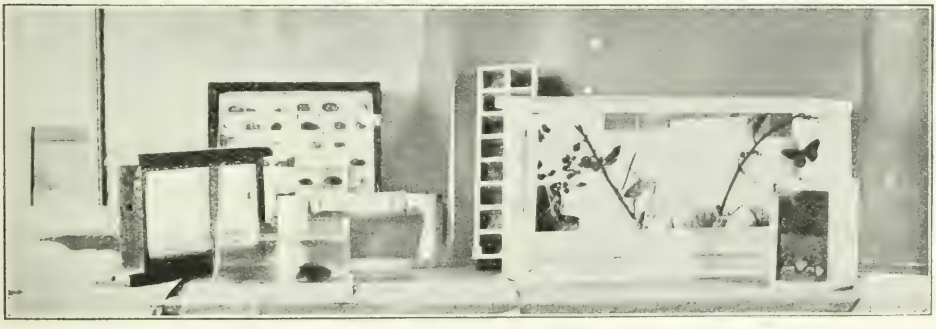


Balance made by London Normal student.

tenance varies considerably, being largely dependent upon the cost of lumber. It should not exceed fifty cents per pupil per year. In the United States it varies from twenty-one cents in Los Angeles to $2.35 in Chicago

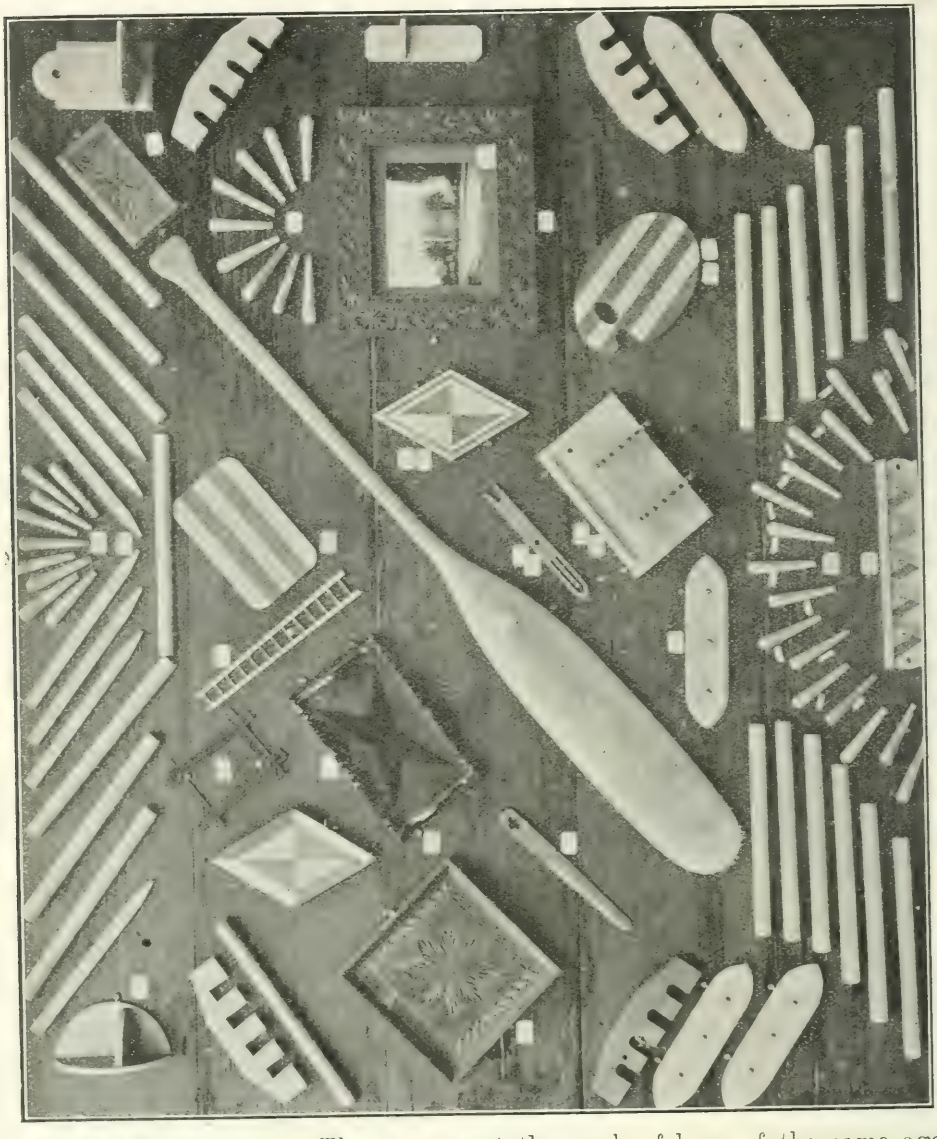


Apparatus for proving "The angle of incidence is equal to the angle of reflection." Made by student of London Normal School.



Nature Study apparatus made by students at London Normal School.

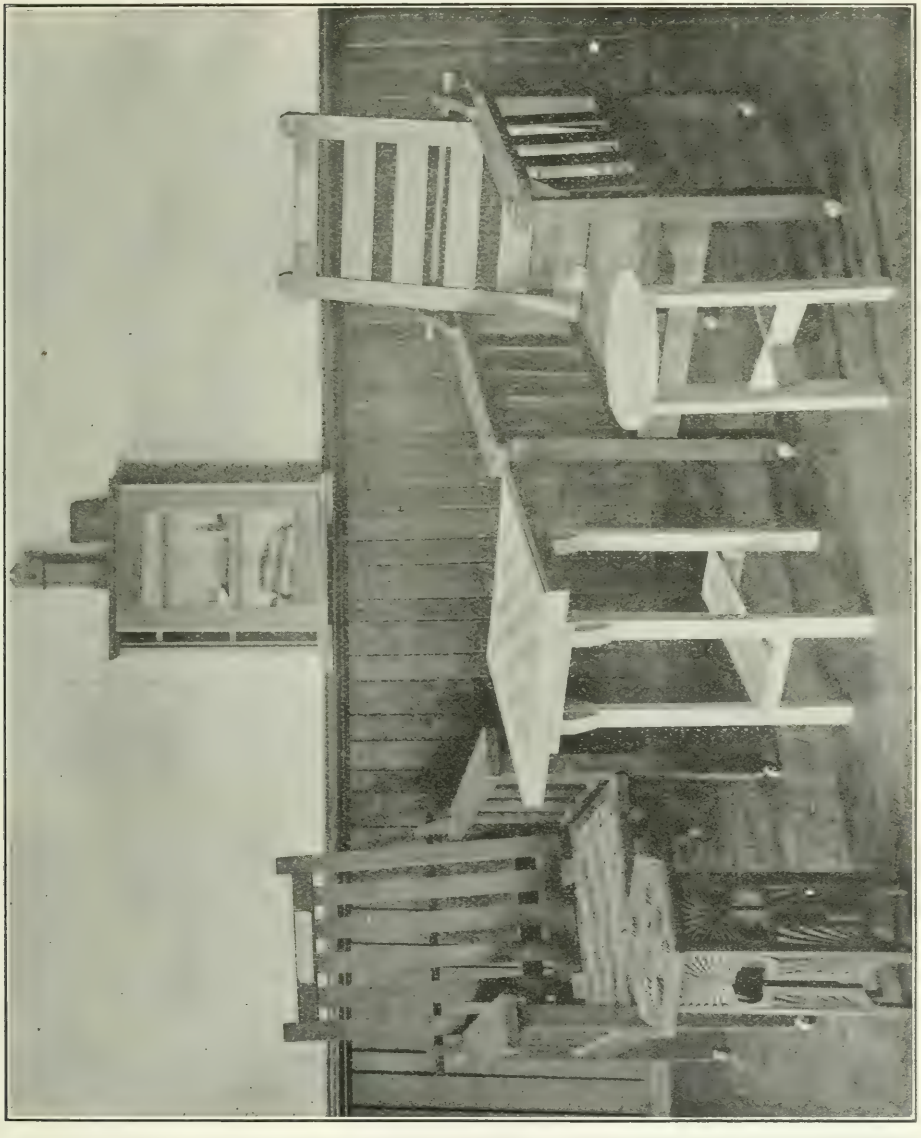
The average cost in twenty cities of the United States is sixty-seven cents per pupil per year. During the past three years the work has been gradually changing in character—developing from the rigid, self-contained course in one material to individual work which allows considerable freedom in size, design and execution. The two photographs next shown graphically illus-



Work of Toronto Public Schools, 1903.

trate this development. They represent the work of boys of the same age, from the same schools and under the same teacher. The method adopted in making the series of chairs shown in the second illustration is exceedingly interesting. It was felt in the first place that much of our manual training tended to selfishness, that is, the boy was engaged in making things for his own use and the idea of service for others hardly entered into his thoughts, and in the second place that the knack of getting along with his fellows and working harmoniously with them, upon which the success of

the modern workman so largely depends, was not receiving the attention its importance warranted. Mr. A. J. Rostance, the teacher of the boys in question, chose ten classes out of the fifteen attending his centre and discussed the matter with them. Each class chose its own foreman and decided to make a "Morris" chair to be presented to the Principal of the school from which the class came, for the use of the school. Plans were discussed, the



Work of Toronto Public Schools, 1906.

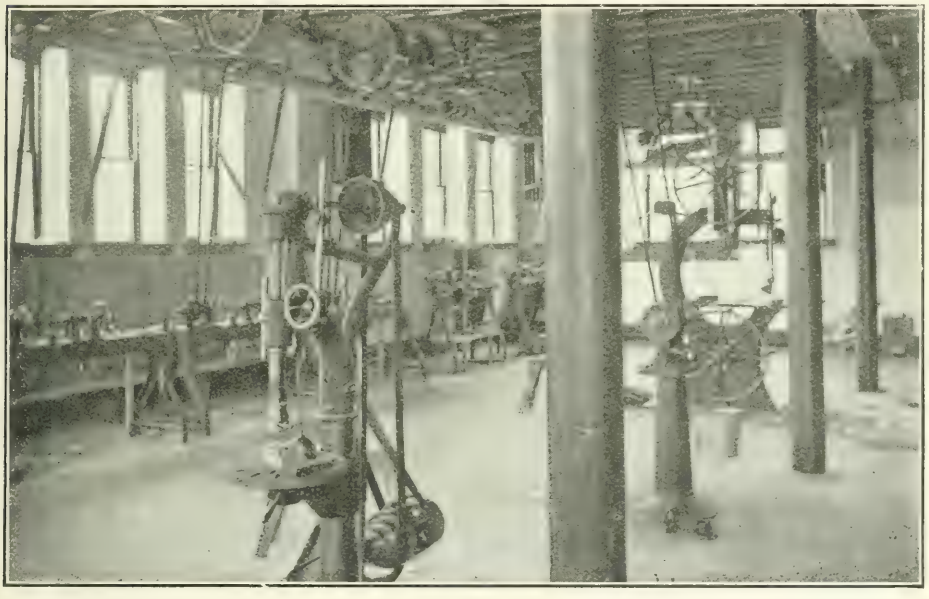
drawings made and the wood bought. Different parts were allotted to different boys and when completed, assembled and built into the finished chairs. Too high praise cannot be given to efforts and experiments of this character. In other places, notably Brockville and Cornwall, a great deal of work has been done and sold, the proceeds going to the benefit of the local hospitals, which have thus benefited considerably.

In the extension of free work of this character we must guard against several dangers. Drawing must not be neglected, as this is at the basis of all our industries. The boy must be taught how to do things that are distasteful as well as those that are agreeable. There is not a man living who has not at some time or other to do disagreeable things. Athletics does not consist always in striving to win. Knowing how to lose is perhaps even more important.

Work of boys and girls at Essex High School.

One authority in the United States says: "The boy makes what he wishes to make and what he does not wish to make is left unmade." We cannot all go as far as this. Life is not all sweet, it is mixed with the bitter, and the sooner the boy learns to take the bitter with the sweet the greater will be his happiness and the broader will be the service he can render to the society in which he lives. The essential tool operations must not be neglected. The boy must be taught how to use tools correctly, and in their proper order, so that if he should enter any industrial occupation where their use is required he will have nothing to unlearn. Correct workshop methods must be adopted throughout and the relationship that one tool bears to another should not be forgotten. In referring to work of this character, Professor Woodward, of the St. Louis University Manual Training School, says: "It is impossible to take notice of all the vagaries into which enthusiastic teachers have been led by the notion that manual training is but the natural expression of what is already in the mind of the pupil, but the reader should reflect that there is a science of education, actual or potential, and that the very essence of a science is logical systematic management. All arithmetical operations depend upon the 'fundamental rules,' the pro-

cesses of algebra consist of repeated applications of the four fundamental processes, the scientific study of a language begins with declensions and conjugations; so tool work, drawing, needlework, cooking, etc., begin with fundamental processes, with typical appliances upon typical materials. The articles constructed, the figures drawn, the garment sewed, or the dishes cooked are incidental, like blackboard work in long division or algebraic subtraction, or manuscript Latin prose; and like them they are valuable because they involve effort and result in mastery and power. The real end and aim of all education, whether 'manual' or 'spiritual,' is the developed, strengthened, disciplined, executive person, regardless of the fate of the exercises or products which were the means of his development."

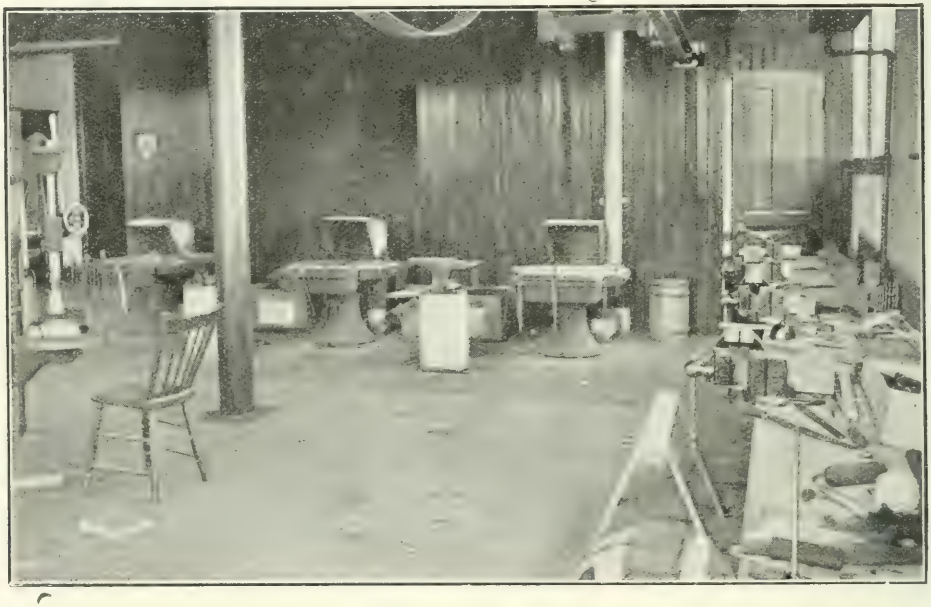


Metal Working Room, showing drill, band saw and lathes. Berlin Collegiate and Technical Institute.

In the majority of places above mentioned the work consists of mechanical drawing and bench work in wood. In Kingston, Berlin, Woodstock, Toronto Normal School, London Normal School, Hamilton Collegiate Institute and Stratford Collegiate Institute, lathes are installed driven by electric motor or gas engine. When boys in the public schools have two years at ordinary bench work, wood-turning can be introduced with great advantage in the first year of the High School course. In schools having only a bench equipment and without power, one or more foot lathes are sometimes introduced for limited use in the making of articles where turned work can be used with advantage. Work in wood-turning and pattern making may be carried on in the bench room by the addition of the required lathes and tools, but wherever conditions admit a separate room should be provided. As showing the excellence of the equipment provided for this work in the United States, the following quotation is given from the Report on the Mechanic Arts High School, Boston. It should prove highly suggestive to authorities wishing to equip such a department, though, of course, the equipment should be cut down to meet the requirements of particular cases:

In the wood-turning and pattern-making room there are thirty-six benches. On one side of the bench is a Putnam 11-in. speed lathe; the other side is used for work with hand tools. As in the other wood-turning rooms, these benches are fitted with 9-in. Wyman & Gordon quick-action vises. Over each bench is an adjustable fixture, which will hold the electric light in any required position.

Beneath the lathe is a tier of three drawers, each containing a set of turning tools. On the opposite side, under the work bench, is a tier of four drawers. The top drawer in this tier is devoted to the measuring and miscellaneous tools used in common by members of different classes, while each of the three others contains an individual set of cutting tools.



Metal Working Room, showing forges and vises. Berlin Collegiate and Technical Institute.

In a case located in the adjoining stock-room are thirty-six drawers, each of which contains a set of turning tools for the use of the evening class.

Individual turning tools:—Buck Brothers' tools: Gouges, No. 20, one each, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{5}{8}$, $1\frac{1}{4}$ ins.; chisels, No. 19, one each, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, $1\frac{1}{4}$ in.; No. 103, $\frac{3}{8}$ in.; No. 104, $\frac{1}{2}$ in.; parting tool, No. 18, $\frac{5}{8}$ in.; a Washita gouge slip.

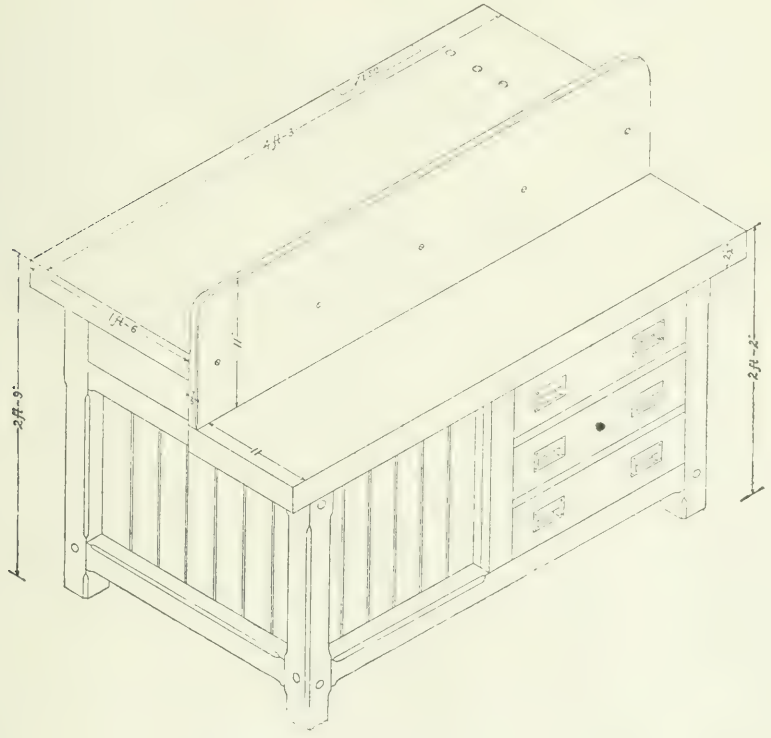
Individual joinery tools:—Bailey's patent adjustable iron tools: One each, fore-plane, 18 in., No. 6; smoothing plane, 8 in., No. 3; spoke-shave, No. 51. Buck Brothers' shank firmer chisels, No. 2, one each, $\frac{1}{4}$, $\frac{3}{8}$, 1, $1\frac{1}{2}$ ins.; a gothic point knife; a Stanley marking-gauge, No. 65; a whisk broom.

Tools used in common:—Bemis & Call Co.'s tools: Wing dividers, 7 in.; wing calipers, 6 in.; patent inside calipers, 6 in. Genuine Russell Jenning's bits, one each, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$ in. Stanley Rule and Level Co.'s tools: Try-square, 6 in., No. 10; rule, 2 ft., No. 18; T-bevel, 10 in., No. 18. A Maydole adze-eye bell-faced hammer, No. 13; a Bliss mallet, No. 3; a Buck Brothers' screw-driver, 5 in., No. 69; a Spofford bit brace, No. 108; a Disston ripsaw, 22 in., D. 8 with 8 teeth to the inch; a Disston cross-cut saw, 22 in., D. 8, with 10 teeth to the inch; a Disston back-saw, 12 in., No. 4;

a bench hook, 12 by 8 by 1 ins.; two winding sticks, 18 by 2 by $\frac{1}{2}$ ins.; a Washita oilstone, 8 by 2 by $1\frac{1}{8}$ ins. in a box; a brass paragon oil can, No. 0; a Chase patent brass oiler, No. 2; a dust brush.

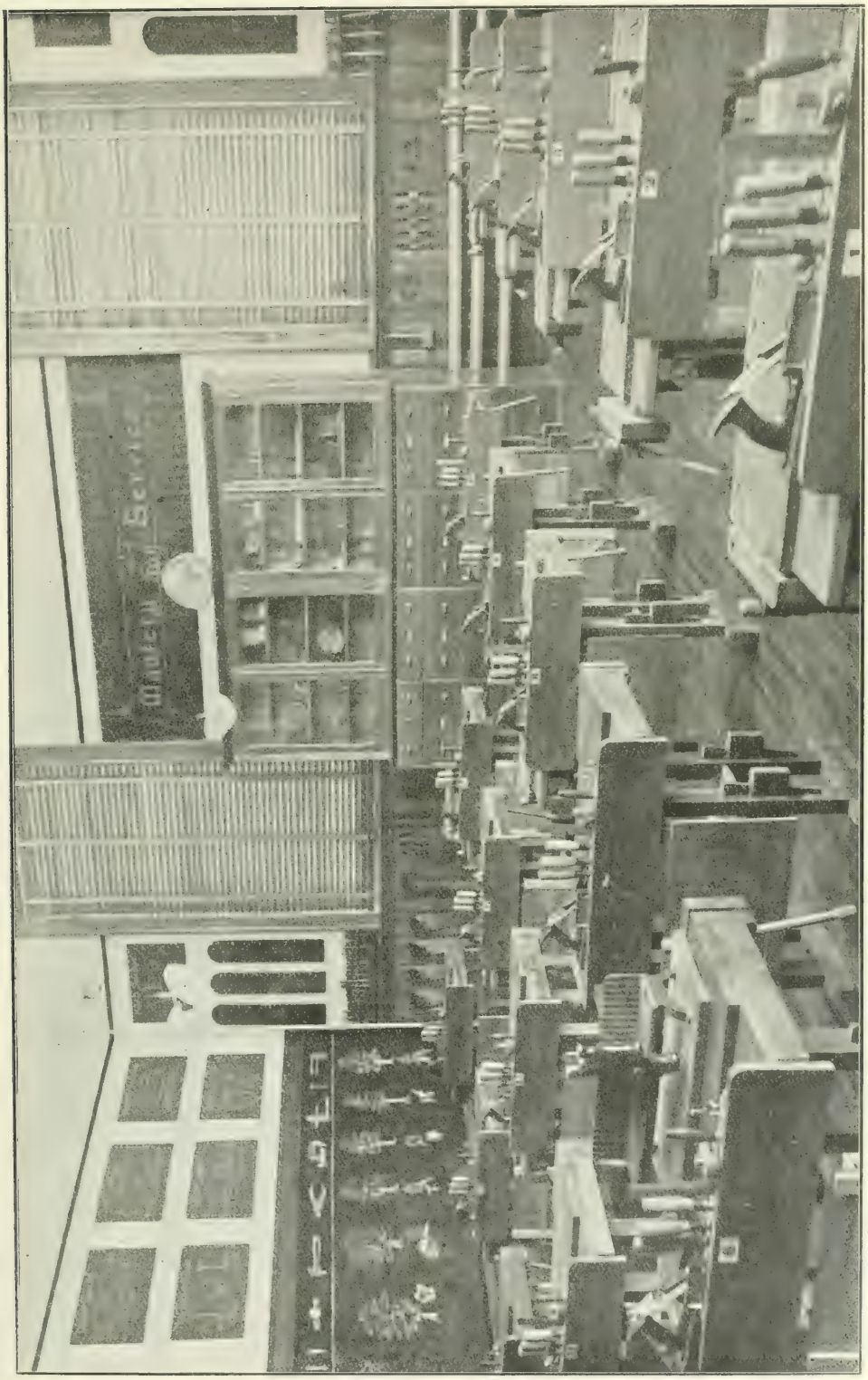
Conveniently located in the centre of the room are two grindstones and an 8-foot Putnam pattern-maker's lathe, which, with open slide, is capable of doing work 36 inches in diameter. This lathe is fitted with the most approved devices for doing all kinds of work, and is designed to be used only by instructors and by pupils who develop special skill and demonstrate their ability to do a higher order of work. Near at hand is a small tool-room which contains a large variety of minor supplies, and all miscellaneous tools likely to be needed. The loft above this room furnishes adequate storage for a year's supply of lumber.

In one corner of each of the three wood-working rooms is an amphitheatre in which the entire class may be seated so that each member can see plainly the work done by the instructor at the demonstration bench. The space behind the amphitheatre has been utilized to provide a convenient place for sinks and mirrors. A copper tank containing four glue-pots heated by steam is installed in each wood-working room. Large cases are provided for the convenient storage of prepared stock and finished work.



The frames of drawing tables and workbenches, and all exposed parts of tables, benches, and cases, are ash; the sides of drawers, interior of cases, and tops of drawing tables are white pine; the tops of work benches are of narrow strips of maple, glued together to prevent warping. All drawers and compartments of cases are fitted with locks, no two of which have the same combination, but all are operated by a master key. The tables and

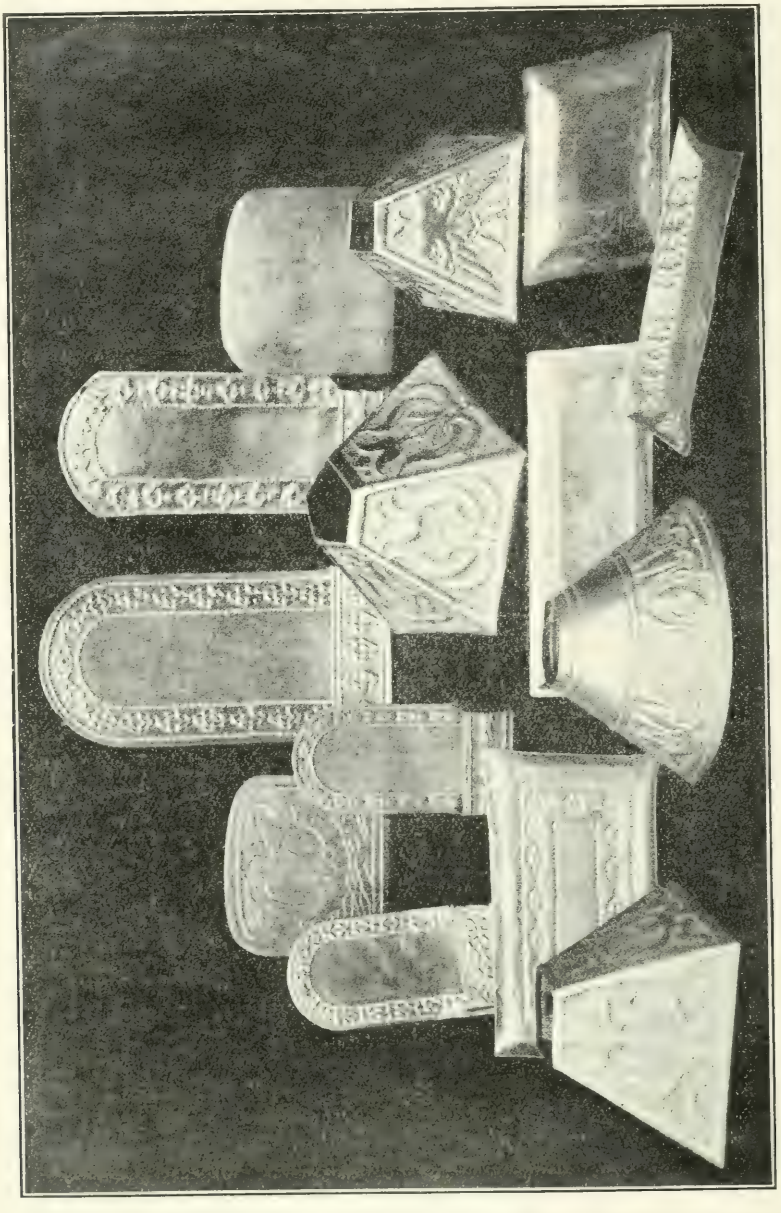
Manual Training Room, Creighton Street Public School, Ottawa.



Manual Training Room, Cartier Street Public School, Ottawa.

benches have been constructed in the most thorough and substantial manner, and no pains have been spared to make every part of the equipment illustrate excellence of design and workmanship.

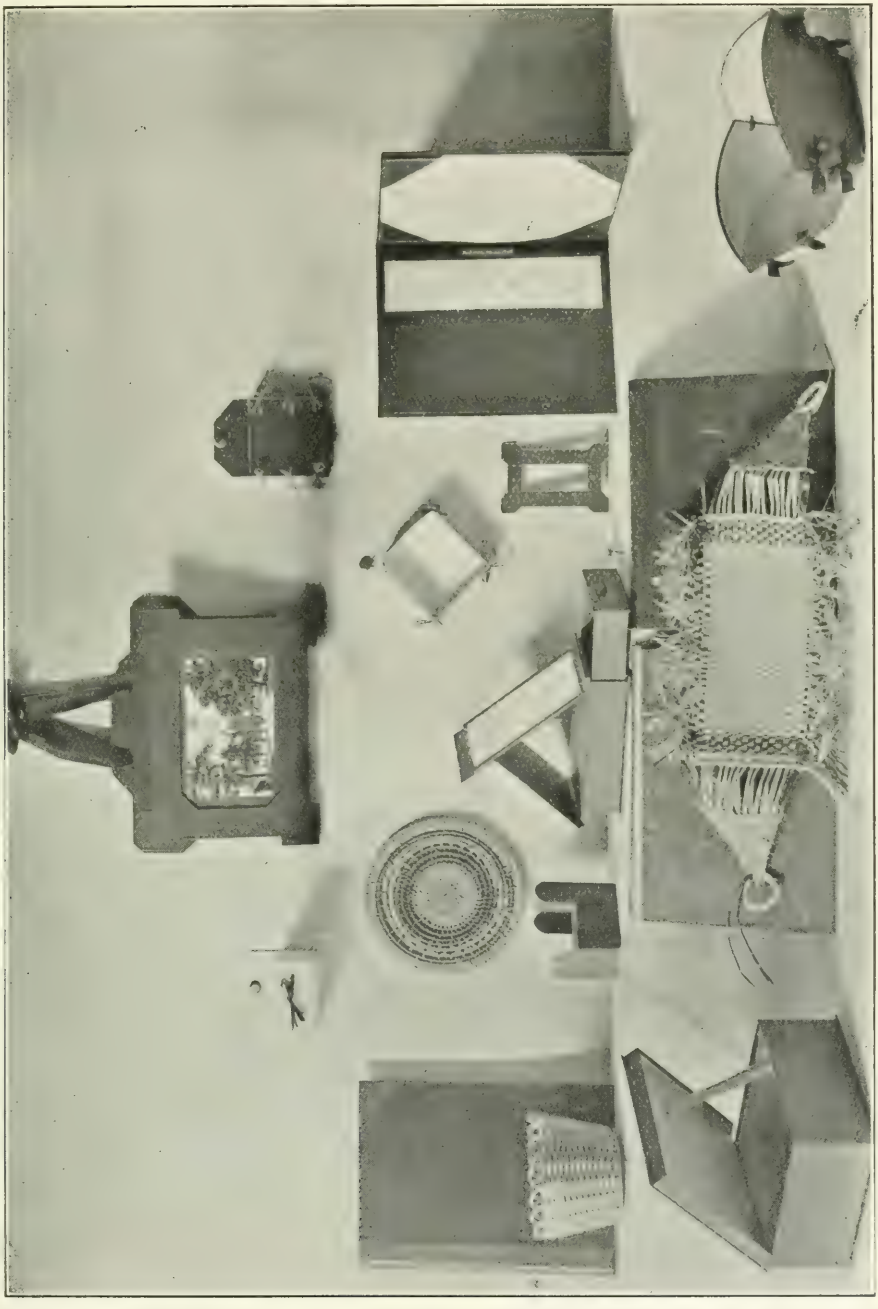
Work in metal is carried on at Stratford, Berlin and Brantford Collegiate Institutes, Toronto and London Normal Schools and Macdonald In-



Metal work of grades five to eight, Grand Rapids, Mich.

stitute, Guelph. The additional equipment for this work consists of metal turning lathes, forges, anvils and the necessary tools and a drill. Very creditable work is being done as far as time will allow, but when it is remembered that only two hours at the most is devoted to this work per week it will be easily seen that the opportunities that are offered to the boys are very

limited. In the Manual Training Schools of the United States, from one-third to one-half of the boys' time is spent in the shops. The room for this work should be of sufficient size, well ventilated and well lighted from as many



Work of one student at Toronto Summer School, 1906

sides as possible. The general idea of a room suitable for a forge shop is thus expressed: "This is to be rough dirty work and the small room down in the cellar will answer well enough." It need hardly be said that work done under such conditions will not be of the best.

An interesting experiment is being carried on in the City of Ottawa in working sheet copper and other metals at the ordinary wood working bench and with very slight equipment and excellent progress is being made with the two commercial classes that are attempting the work. This material is largely used in the United States, but so far, with the exception of the instance just mentioned has not yet been adopted in Ontario. Ottawa has the honour of having more manual training centres than any other town or city in the province. Nine centres are now running with two more to be opened early in 1907. When the salaries of the manual training teachers in this city are brought up to the level of those in Toronto, Ottawa will hold first place in the Dominion in providing facilities for work of this character.

During the year new forms were drawn up on which to record the inspection of these schools. A copy of this form may be obtained on applicaplication to the Education Department.

If space permitted a number of quotations might be given from the writings and speeches of men eminent in every walk of life as to the advantages and benefits of manual training, but two must suffice. Nicholas Murray Butler, President of Columbia University, says: "The boy who has passed through the curriculum which includes manual training will make a better carpenter, a better draughtsman, or a better metal worker than he who has not had the benefit of that training. But it is also true that he will make a better lawyer, a better physician, a better clergyman, a better teacher, a better merchant—should he elect any one of these honourable callings, and all for the same reason, namely, that he is a better equipped and more thoroughly educated man than his fellow in whose preparation manual training is not included.

In Circular No. 2 of the United States Bureau of Education, the following passage occurs: "The great bulk of the population is to be trained for usefulness in the Public Schools of the country, and the obvious duty of those in whose charge these schools are placed is to devise a plan by which during the few years of average attendance the pupil may be so trained as to be best prepared for the duties of life. It is found that merely to read, to write and to cipher does not do this.

Household Science.

Household Science may be said to be the feminine of manual training, and is at present being taken in the following centres: Public School, Guelph; Consolidated School, Guelph; Berlin Collegiate Institute; Normal Schools, Ottawa, Toronto, London; Normal College, Hamilton; King Edward School, Winchester Street School, Queen Alexandra School, Wellesley School, Parkdale School, Technical School, Toronto; Caroline Street and King Edward Schools, Hamilton; Brockville Public Schools; Kingston, Stratford, London, Brantford, Renfrew, Ingersoll, Woodstock, Broadview Boys' Institute Toronto, Stamford; Young Women's Christian Guild, Toronto; St. Thomas; Belleville; Lillian Massey School, Toronto; and Macdonald Institute, Guelph.

This year, for the first time in the history of these schools, each has been inspected and reported on individually, and the reports sent from the Department to the authorities concerned.

A copy of the form being used for this purpose may be had on application to the Education Department.

The schools generally are well equipped but are almost without exception lacking in illustrative material. In every Household Science depart-

ment there should be a collection of food products both in their raw and manufactured states. Various manufacturers send out specimens showing the processes of manufacture of their goods. Charts showing the chemical composition of various food stuffs should be provided and every effort made to obtain such a collection of charts, illustrations and specimens as will give

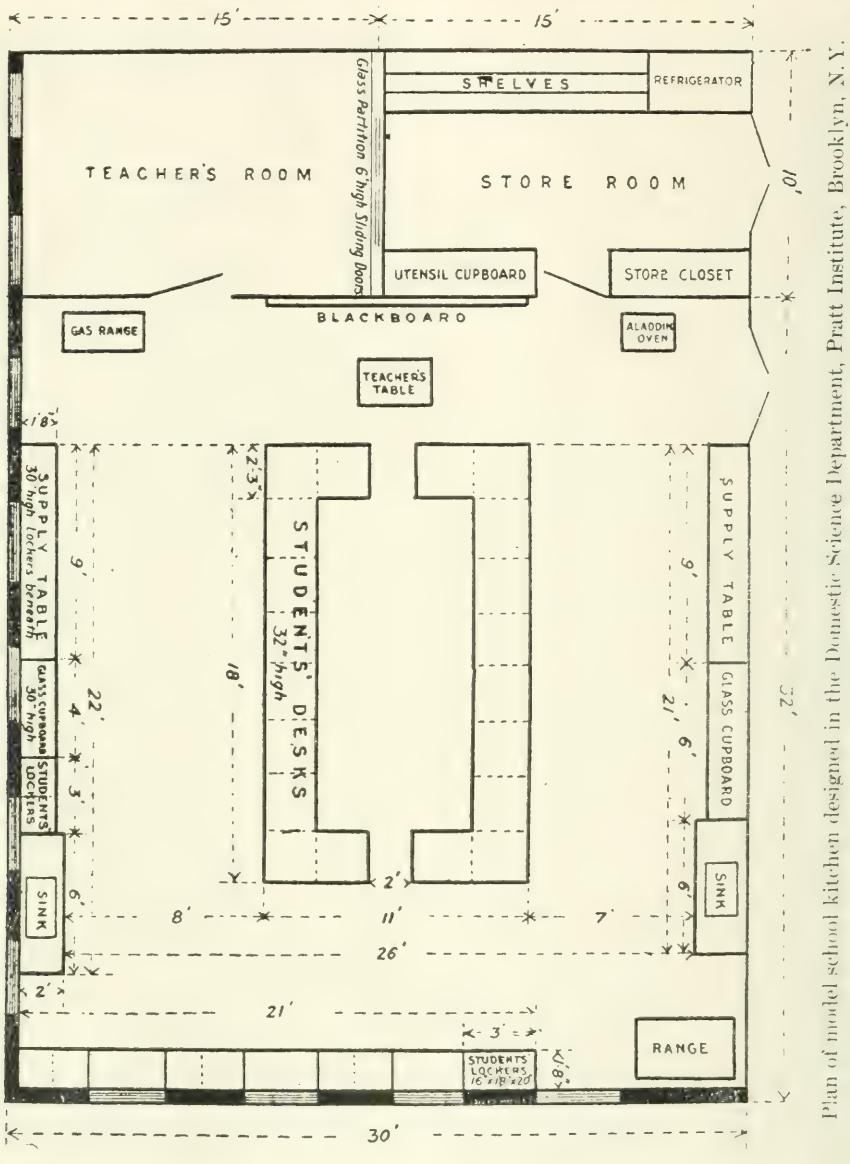
Household Science Centre, Consolidated School, Guelph.

life and vitality to the multifarious problems that Household Science should deal with. Charts and models illustrating the principles of plumbing and ventilation should also be provided.

The teaching of cookery is not simply the preparation of certain dishes which might be shown by any ordinary cook, but includes much instruction in the nature and use of food and in the difficult art of choosing suitable

nourishing and at the same time economical articles of food in order that the smallest incomes may stretch to meet the needs of even the largest families.

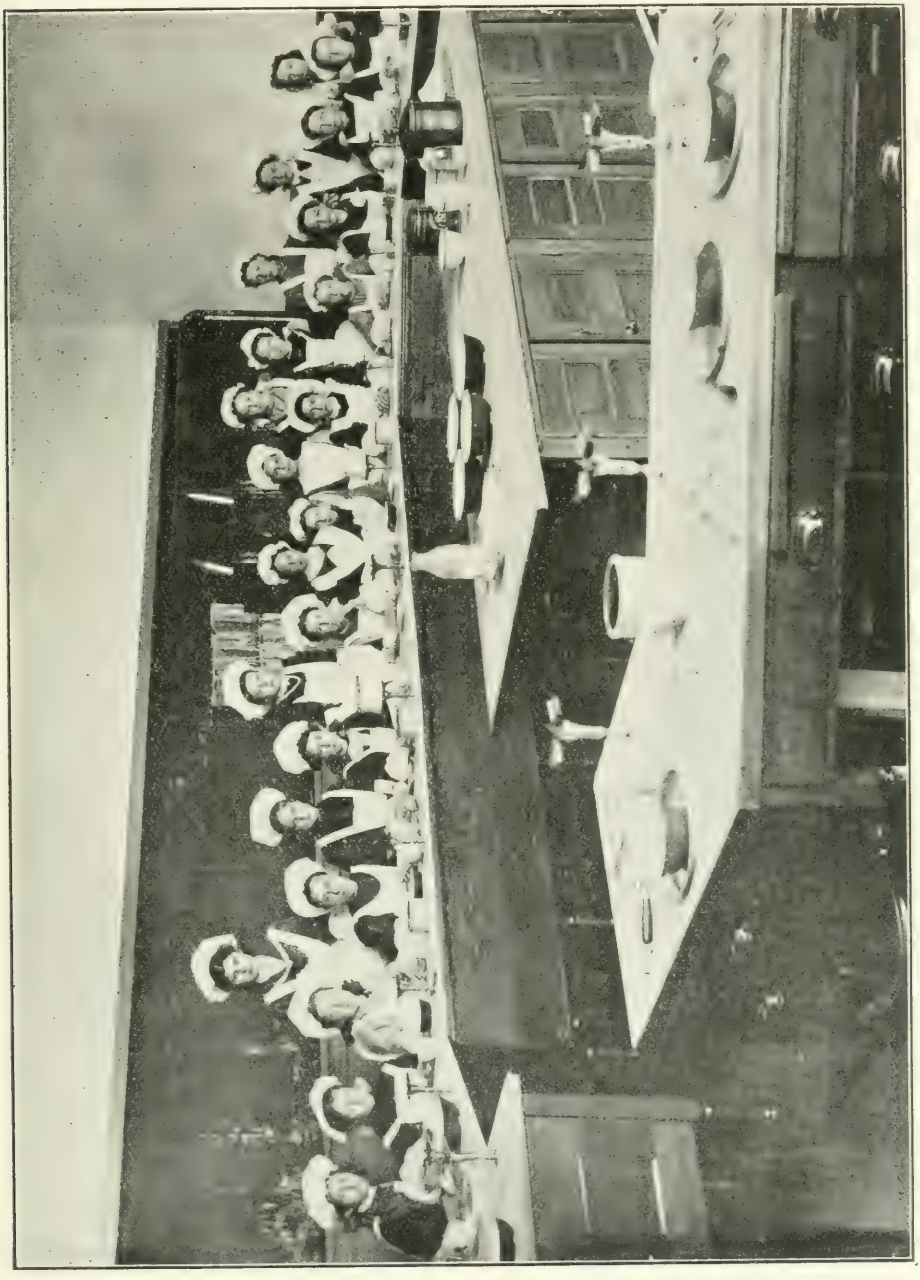
Such instruction as will give the children an intelligent interest in the matter, so that understanding clearly the true purpose of eating and what



Plan of model school kitchen designed in the Domestic Science Department, Pratt Institute, Brooklyn, N.Y.

things serve that purpose best, they may eventually become thoughtful thrifty housewives, not merely mechanical workers or unintelligent drudges. "To be a good cook means the knowledge of all fruits, balms and spices, and all that is healing and sweet in fields and groves, savory in meats; it means carefulness, inventiveness, watchfulness, willingness, and readiness of appliance; it means the economy of great grandmothers and the science of

modern chemists; it means much tasting and no wasting; it means English thoroughness, French art and Arabian hospitality; it means in fine that you are to be perfectly and always ladies (loaf givers), and you are to see that everybody has something nice to eat."—Ruskin.



Household Science Department, Queen Alexandra School, Toronto.

Up to the present the term "Housenold Science" has had a much too restricted meaning in the Province. There is a strong tendency in many quarters to regard it as cookery only. Important as this subject is, it is to be

regretted that this opinion should hold. We do not live in the kitchen. The bed room, the bath room, the dining room, etc., should also receive due attention, and for this reason the kitchen should not be regarded as the unit of equipment. The best schools in England and the United States are taking the whole house as a unit, and their household science departments consist of kitchen, dining room, bed room, bathroom, and drawing room. In some cases a laundry is added also. At present the Macdonald Institute is the only school in the Province where this is the case, but it is hoped that when the long looked for and much needed Technical High School is built and the new building for Household Science in connection with the University is ready for occupation, the equipment mentioned above will be included.

Sick room cookery and home nursing should be given an important place in the curriculum of these schools, for though teaching people how to keep well is one of the main purposes of household science, yet sickness will come and it is almost a commonplace to say that good nursing cures more patients than good doctoring. The care of young children is particularly important. Beyond doubt many children are sacrificed every year through want of attention—improper food and unsuitable clothing. A few straight heart to heart talks to the older girls, given by a tactful teacher would be calculated to do much good. At the Girls' Technical High School, in New York, a very young baby is brought into the class and lessons given to the older girls on its bathing and general care. Though there is not perhaps the same necessity for instruction of this kind as exists in the crowded cities of England and the United States, there is still need of some of it, and as the towns and cities become more crowded the necessity will become more pronounced.

Household science throws light on all that group of facts and principles that has to do with a wise, economical and successful management of the household. It should not confine its interests to the chemistry of cooking as to nutritive values and comparative cost of various kinds of foods. It gives careful attention to pure water, pure food, personal and public hygiene and to other topics that are closely concerned with health in the family and in the community. It deals also with lighting, heating, plumbing, sanitation and ventilation and aims to show how the latest results of scientific research will contribute to greater economy in the home and longer useful service to society. Household Art has also an economic bearing upon individual and social life, and in addition to this, it has a refining influence upon the student because it helps to develop an appreciation of the beautiful and artistic and adds much to the capacity for enjoyment and service. These subjects are therefore of the highest importance because they bear an intimate relation to that most fundamental of all institutions—the home. Whatever ministers to its attractiveness and comfort makes a valuable contribution to the highest welfare of society. It is the opinion of many sociologists that of late years the influence of the home has been on the decline, and everything possible should be done to furnish such training for the future homemakers so that they may be able to meet adequately their heavy responsibilities.

One frequently hears the following criticism of household science as at present taken: "Your cooking is all very well; it teaches the girl how to prepare a single dish, but if the mother falls sick and the girl has to take charge of the house she does not know how to prepare a complete meal." This criticism is common and has a good deal of truth in it, and for this reason during the past year I have in my inspectorial visits always made enquiries as to what is being done towards giving instruction in the preparation of a complete meal. I am aware that the difficulties in the way of

doing this are great, the chief one being in the time allowed for the subject—generally one and a half hours per week, and at the most two hours—but something should be done in this direction even if the other branches of the subject have to be neglected.

"Woman's present activity in inventions is due to the better educational advantages now obtainable, the popular courses in sloyd and manual training having taught women to use their hands as well as their brains, developing their inventiveness. In the past eight years thousands of patents have been granted to women, seventy-five per cent. of which are yielding profitable returns."—*Scientific American.*

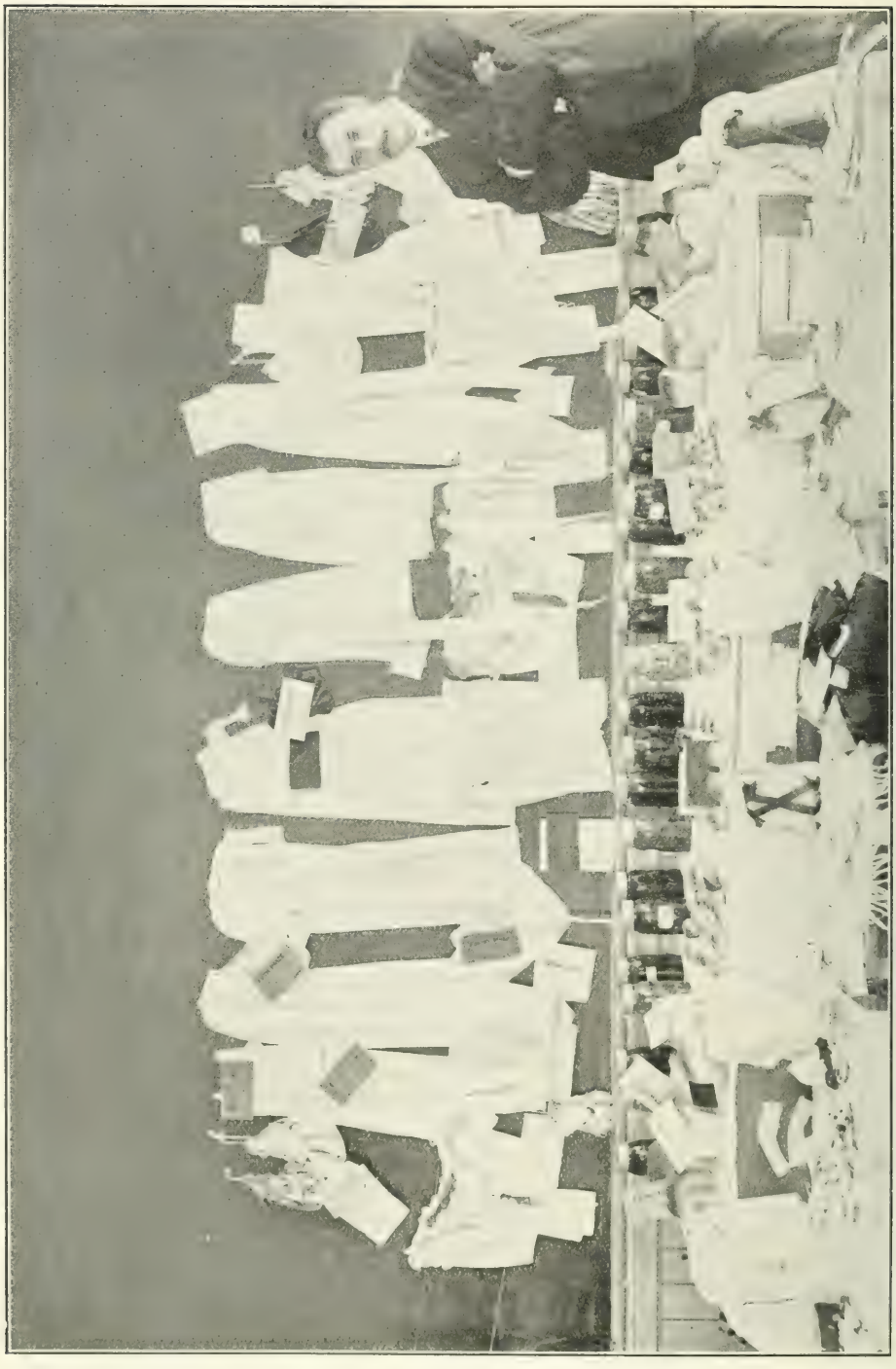
"He who works with all his strength on the development of our knowledge of food and nutrition and who also persistently strives to apply the results of investigation is working on a broad basis for the development of mankind."—Donders.

Sufficient attention is not being given to needlework. This is a subject that needs little equipment for its effective teaching, beyond a competent teacher, and is one which every girl should be taught. The teachers throughout the Province should have their attention directed to this matter.

Probably the most useful material that has ever been published in connection with these subjects is to be found in Volumes 15 and 16 of "Special Reports on Educational Subjects," issued by the Board of Education, London, England. The first of these deals with "The Teaching of Domestic Science in the United States of America," and the second is entitled "School Training for the Home Duties of Women in Belgium, Sweden, Norway, Denmark, Switzerland and France." These two volumes give elaborate accounts of the latest thought and practice on this subject and should be in the hands of every teacher. Many bulletins issued by the Department of Agriculture, Washington, D.C., will also be found very helpful. They are used by a number of our teachers, but many are not aware that they are obtainable. Amongst the most useful of these are the following: No. 29, Souring and other Changes in Milk; No. 34, Meats, Composition and Cooking; No. 52, The Sugar Beet; No. 74, Milk as Food; No. 85, Fish as Food; No. 93, Sugar as Food; No. 112, Bread and Bread Making; No. 121, Beans, Peas, and other Legumes as Food; No. 125, Protection of Food Products from Injurious Temperatures; No. 128, Eggs and their Uses as Food; No. 131, Household Tests for the Detection of Oleomargarine and Renovated Butter; No. 142, Principles of Nutrition and Nutritive Values of Foods; No. 182, Poultry as Food; No. 203, Canned Fruits, Preserves and Jellies; No. 220, Tomatoes; No. 249, Cereal Breakfast Foods.

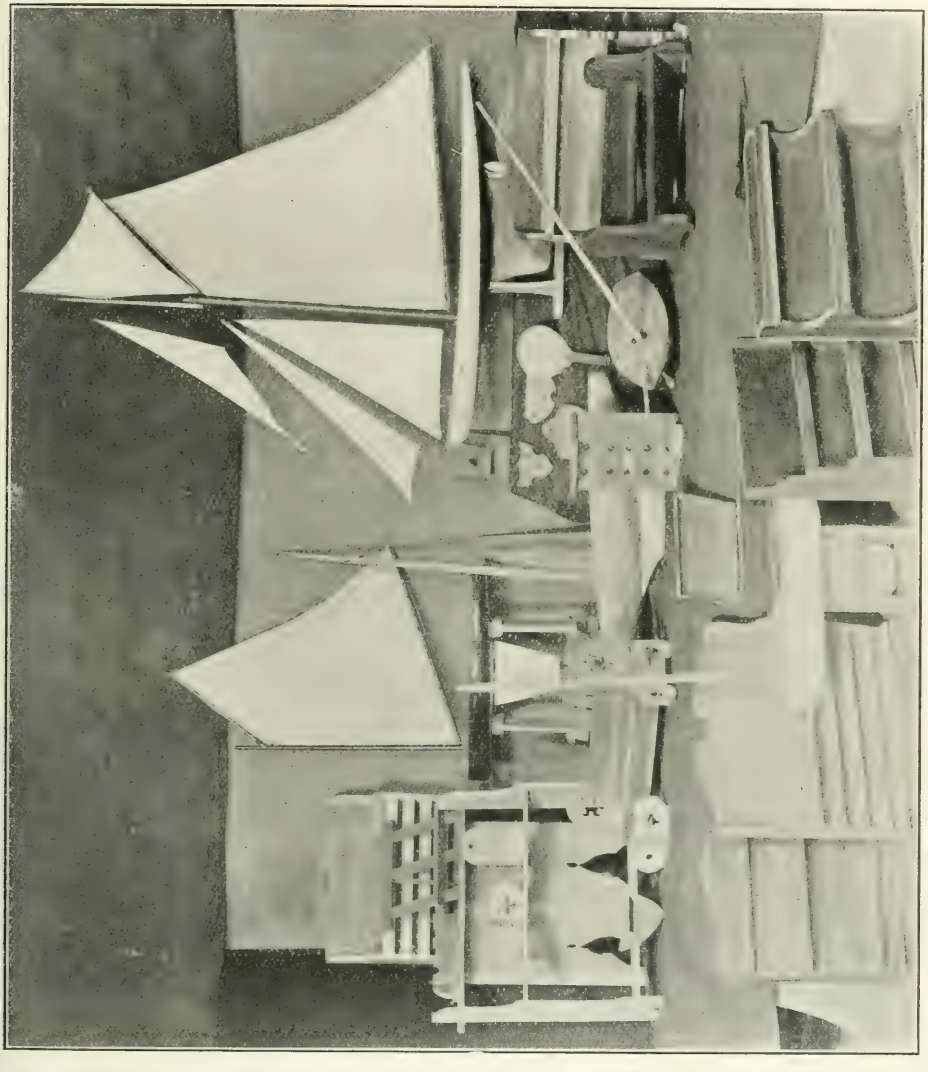
The Rural School.

If the subjects of manual training and household science are as important as all educationists and public men now think they are, is it not a lamentable fact that the children being educated in the rural school are not reaping any of the advantages they are capable of conferring. Nearly fifty-eight per cent. of our total population is being educated in the rural school, and it is neither Christian nor politic that fifty-eight children out of every hundred should be deprived of the advantages of newer methods and modern practice which scientific research in the department of pedagogy have brought about. An impression is held by teachers and trustees that these subjects cannot be introduced without the installation of an expensive equipment costing from $400 to $500. This impression is founded on a wrong idea. The State Superintendent of Education of the State of Illinois, in an



Household Science and Art, Guelph Public Schools.

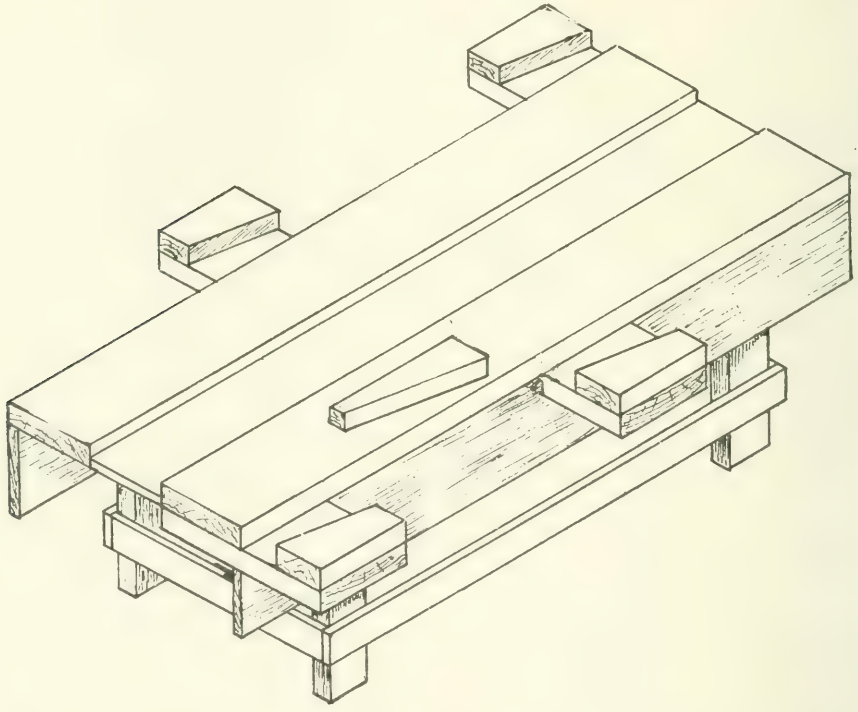
address delivered before the National Educational Association, spoke as follows: "A young woman teaching in the country for the excellent reason that she had been crowded out of town, in the course of two school years, both short, contrived somehow to have the boys fit up quite a workshop in an unused stall of a nearby stable. There was nothing said about the "introduction of manual training" or the project might have failed. They



Work of Model School Boys, Toronto.

wanted to make a sled "for the boys to draw the girls on," so in the beginning it was merely part of their play. The tools and the lumber were brought from the homes, and after the sled followed some shelves for books; whereupon it occurred to the head boy one noon that a cabinet with a glass door for their "specimens" would be about the right thing. Nature study had not been "introduced." The directors would hardly stand for that. But some of the geography class had gathered a few fossils from a quarry, and some different kinds of wood that grew along the river, and one of the boys

had caught a pretty good sized gar pike, and "just to see if they could get replies," they had written letters to schools in other parts of the country, mentioning their stock in trade; exchanges had accumulated and were still coming, so they needed a cabinet, and without thought of manual training set to and made it. There were some pictures. They would look better in frames, so they framed them. They wanted to see how long it took different seeds to germinate and grow up and get ripe, so they experimented with them. Nothing was said about a school garden, nor was it expected that there would be anything to sell but the proceeds bought a book. The flowers were planted just to make the yard look prettier. Something had been said about "watering with a rake" which somebody did not believe, so they set to work to prove it. Thus manual training and nature study broke into one school. How both disappeared and were not when the teacher got married is another story."



The adoption of these studies by small communities has been unintentionally hindered by the expense of the equipment now considered necessary After inspecting such an equipment, trustees have frequently decided that their finances would not allow them to indulge in the "luxury." The early ideals of manual training were that a certain equipment of tools, a fixed course of study consisting of typical forms of construction and technical methods of drawing were essential. Now these ideals are held by none. Let me give the experience of a teacher dealing directly with this point. He says: "The Woman's Club, of Morgan Park, Ill., a suburb of Chicago asked me last summer to organize and conduct a vacation school in manual training at as small an expense as possible. Two classes of twelve pupils each were organized. The children of both sexes ranged from five to fifteen years of age. Each child purchased a kit of tools costing retail price $3.18

consisting of one 12 inch Disston's back saw, one coping saw with one dozen extra blades, one half inch firmer chisel, one marking gauge, one two-foot rule and one six-inch try square. From my own tool chest I loaned a few tools for general use. The Board of School Trustees permitted a room in one of the school buildings to be used by the classes and made a contribution of $25 to provide work benches, the Board to keep the benches after the close of the vacation school. The bench shown in the accompanying illustration, a four-pupil bench, was the style used. Three benches accommodating twelve pupils cost $13 complete, as you see it here. Upon the top of the bench you see a wooden wedge which was used to hold the material while the child was at work. It is a practical bench, although a little bit inconvenient. To make the benches a little more convenient, an iron vise costing $3.25 was later on attached to each four-pupil bench, the pupils changing position as required. The total cost of the three benches was $22.75. A grindstone cost $5.00. About $10.00 was expended for material. The term was of six weeks' duration, 30 lessons of ninety minutes each. The total expenditure was $210.07, including children's tools, salary of teacher, and incidental expenses. These Morgan Park children received thirty lessons, which is equivalent to three-quarters of a year of forty weeks with one lesson per week. If such a school could be conducted for six weeks at such small expenses it could be continued for a longer period of time if necessary Those who needed aid in order to purchase tools could be taught to set a pane of glass, to letter small signs for shop windows, to paint numbers for houses, to cane chairs, or something by which they could earn money enough to buy the tools.

"This is not only lessening the cost of the manual training equipment, but it also inspires the pupil to have confidence in his own ability to provide for his needs and it secures the moral support of the community. With moral support secured, the trustees will see the way clear for the extension of the work."

It is hoped that the practical experience of the two teachers above cited will offer suggestions to many teachers who may be placed in like circumstances.

I extract the following from the Manual Arts Bulletin, issued by the State Normal School, Athens, Georgia:

"A double bench built to accommodate two students is perhaps more economical than single benches. Such a bench can be built ($2\frac{1}{2}$ feet by 3 feet by 5 feet) and supplied with two vises at a cost of approximately five dollars. A tool equipment that will suffice for all ordinary demands consists of the following for each boy: One half inch chisel, mallet, back saw, jack plane, marking gauge, rule, and try square. It can be bought for $3.00 or less. To make this list more complete there might be added a hand screw, hammer block plane, knife, and $\frac{1}{4}$ inch and $\frac{3}{4}$ inch chisels. Besides the individual bench equipment certain tools for general use will be needed. These can be added for $15. It is evident therefore that something can be done in shop work in the country school for a first cost of less than $30 if quarters are provided, and it is possible to do excellent work in a mere shack as far as a building is concerned. Other items might be added which would enhance very much the quality of the work possible, but a beginning can be made with the equipment named."

With reference to household science very good work can be done with a simple equipment. The following suggested equipment is taken from the "*Normal Star*," a publication of the Ottawa Normal School.

Suggested Equipment for Rural Schools.

3 Granite Saucepans No. 10	$0 30
2 do two sizes larger	40
1 Granite Dishpan, eight quart size	35
1 do fourteen quart size	50
1 Tea Kettle, flat bottom, No. 6.	60
1 Stew Pan, straight sided, quart size	20
3 Bowls, White Soup Bowls, No. 12	05
3 Plates, dinner size, White No. 22, good quality	25
(The above to be good quality Granite.)	
1 Dover Egg Beater	10
1 Surprise Egg Beater	05
1 Measuring Cup, marked in ¼, 1-3	05
1 Grater	05
1 Small Steamer, and Kettle to fit	50
1 Cake Tin, 8x5x2 in.	20
1 Flour Sifter, Victor	15
1 Towel Rack, 4-leaved screen shape (cheaper one would do)	50
1 Meat Board, hard-wood, 10x12 in., 1 in. thick	15
3 Wooden Spoons	15
2 Mixing Bowls, 1 and 2 quart size	50
1 Jug, 1 quart size	20
1 Salt and Pepper Shaker	25
1 Tea-pot, pint size, Brown Globe	20
6 Pint Fruit Jars (for holding supplies)	30
1 Lemon Reamer	10
1 Crock (for garbage) with cover	25
3 Frying Pans, Acme size 00 (1 would do if teacher does cooking)	15
1 Can Opener	10
6 Teaspoons	25
3 Tablespoons	25
6 Knives and Forks (3 forks would do)	75
3 Paring Knives (2 would do)	30
1 Spatula	30
1 Rolling Pin	15
1 Pastry Board	25
1 Cake Cutter	10
2 Dish Towels	75
3 Dish Cloths	15
3 Scrub Cloths	15
3 Dusters	15
1 Blue Flame Stove, (two burners, improved make, with oven) or single coal oil stove, $1.00 each, but not so good	8 60

Additional Equipment Desirable, but not Essential.

1 Kitchen Table with Drawer (might use table in room)	2 50
1 Pint Measure	21
1 Tin Flour Box	60
6 Cups and Saucers (fewer would do)	50
6 Medium Size Plates (fewer would do)	40
1 Jug, 1 pint size	15
1 Carving Knife and Fork	1 90

1 Pair Scissors	25
Miscellaneous—Soap Dish, Hammer, Cork Screw, Floor Cloth, Salt Box, Thermometer, Wire Strainer, Dust-pan, Clock, etc., about	2 00
Total	$26 36

The above list will give an approximate cost of a very simple equipment, but one with which good work could be done, and some individual work, say three pupils working together. The kitchen table could be fitted with a framework underneath with doors, in which utensils could be kept when not in use, and locked so as to prevent pupils tampering with them. The teacher may omit or add to the above as the requirements of the special case may demand. Table setting and serving may be taught on the kitchen table, when a table-cloth and sufficient dishes may be borrowed for the occasion, if considered too expensive to purchase.

Cost might be reduced to about $12.00.

Training of Teachers.

Owing to the rapid extension of schools for manual training, the question of the training and supply of teachers is becoming urgent. The scarcity is felt particularly with regard to manual training as, owing to the lavish manner in which certificates have been granted and no previous professional training having been required, there are more household science teachers holding the paper qualification than will be employed during at least the next five years. In manual training before a teacher is allowed to take the course at the Macdonald Institute, he must hold at least a Normal School diploma and the time has now come when this should be required of candidates for the teacher's qualification in household science.

The present regulations place a difficulty in the way of teachers wishing to qualify to teach manual training which in some cases amounts to a positive hardship. Many who are actively engaged in school find it impossible to give up their situations and forfeit their salaries for one year and bear the expense of a year's training additional to that they have already received at one of the Normal Schools or the Normal College, notwithstanding the fact that many of them are anxious to qualify. Teachers entering the Macdonald Institute from the Normal Schools or the Normal College should have credit allowed them for the work already done at those institutions and a corresponding reduction made from the length of the course. A limited number of scholarships might be offered to first-class teachers in order to induce them to take up this work. If this plan can not be followed some such method as now outlined must be carried out. The circumstances in which many of these teachers are placed make it quite possible for them to obtain instruction in local shops and factories in the use of the various wood and metal working tools. They can and are willing to attend summer schools either in Canada or the United States to further supplement the instruction thus received. As the Department now holds examinations to qualify Specialists in Art, it should institute an examination of somewhat the same type to qualify specialists in Manual Training. Such an examination might consist of the following branches:—

1. A practical examination in teaching a class in wood or metal work.

2. Accomplishment of a prescribed course of reading on the pedagogical side of manual training.

3. A written test of knowledge of timber, tools and processes.

4. A practical test on mechanical drawing.

5. A practical bench-working test.

The same conditions as at present exist should be maintained, that is, only Normal students should be allowed to take the examination. Last year over 1,000 students were examined by the City and Guilds of London Institute, under similar conditions to those mentioned above, for the teacher's certificate in manual training. The examination in this subject by that body takes two years and the certificate is only granted to those who succeed in passing the final examination. A specimen set of papers given follows:—

Practical Woodworking.

Saturday, May 7th.

Instructions.

The Candidate must write his Examination Number, as on his Card, on each piece of Woodwork.

At the close of the Examination he must make a parcel of his work by fastening the several pieces together with string.

Four hours allowed for this part of the Examination.

1. From the piece of basswood, of dimensions 18 ins. by 3¼ ins. by 1 in., make the hat rail, with two hat pegs, as shown in the drawing. (100 marks.)

2. From the piece of yellow deal, of dimensions 26 ins. by 2⅜ ins. by 1⅜ ins., make the three joints as shown in the drawing. (150.)

3. From the piece of basswood, of dimensions 17 ins. by 3½ ins., by ⅞ in., make the coat hanger as shown in the drawing. (50.)

Note.—The segments of circles may be marked on the wood by using a wooden radius rod, moving on a bradawl as centre, or by freehand, according to the dimensions stated on the drawing.

N.B.—Accuracy of craftsmanship will be the chief consideration in awarding marks.

No glasspaper to be used.

Drawing.

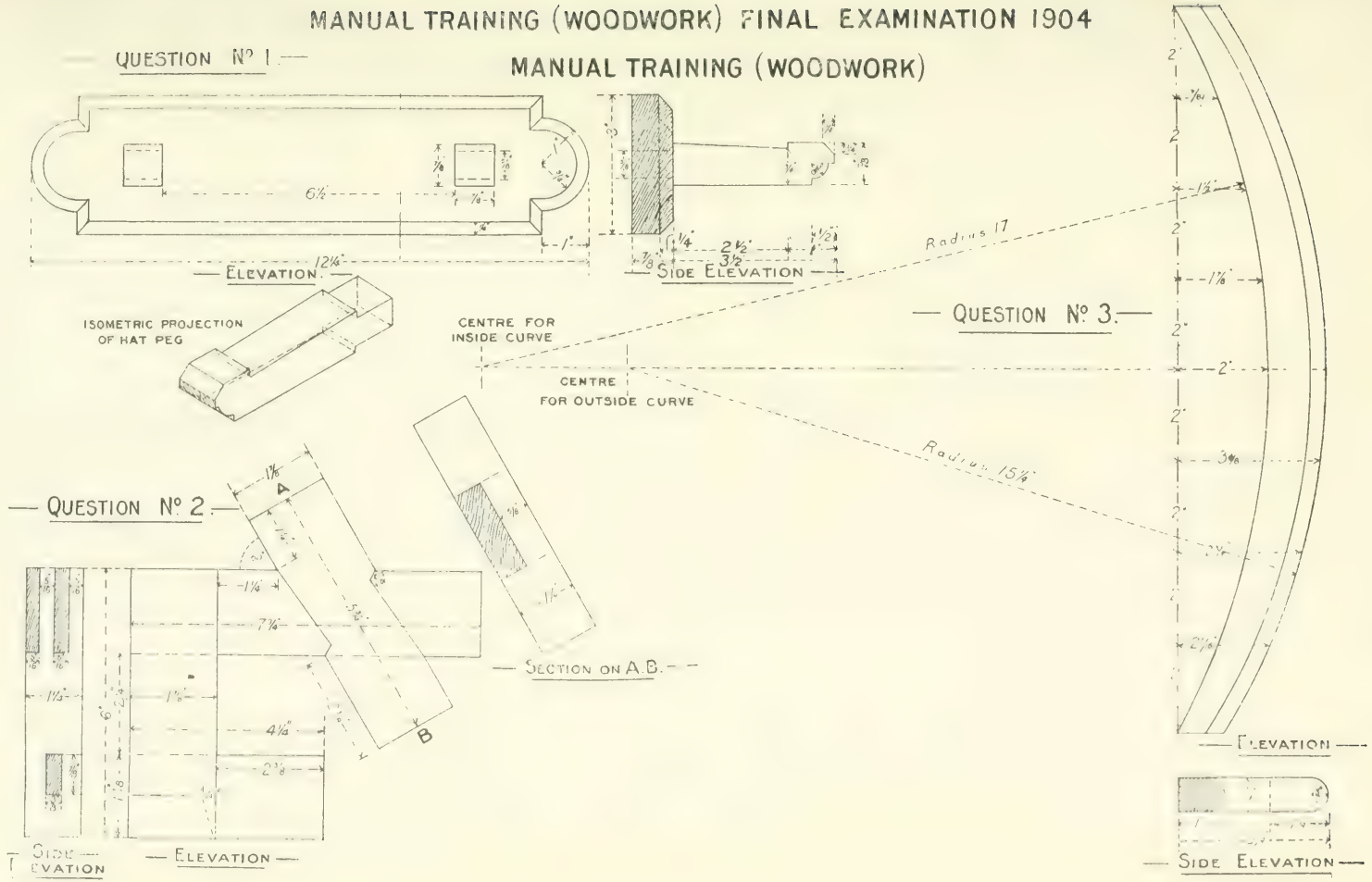
1. Draw the given views: scale half full size; the feet are portions of regular hexagons. (30 marks.)

2. Draw the given plan and elevation and make an end elevation; find the true length of the edge A B; make a vertical section on the line X Y, showing the true shape of the section; all full size. (35.)

3. Draw the given elevation of a roof truss, scale one inch to one foot. Make two views of the halved joint at A, scale one-quarter full size (setting out the angle carefully); make an oblique or isometric projection of one piece. Certain lines are omitted from the upper drawing and are shown, for clearness, to a larger scale below. Put in these lines in your projection, but do not reproduce the lower drawing. (35.)

MANUAL TRAINING (WOODWORK) FINAL EXAMINATION 1904

MANUAL TRAINING (WOODWORK)



WRITTEN EXAMINATION.

1. What timber is most commonly used in the construction of tools employed in manual training woodwork? Why is this timber preferred and how is it seasoned? (10 marks.)

2. Which do you consider are the three parts in the structure of a timber-bearing tree which are most essential to its vitality and growth? Describe one of those parts as you would to a class of pupils. (10).

3. Define "warping." Arrange the following timbers (all of which, say, have received similar treatment), with reference to their susceptibility to its influence:—English oak, American ash, sycamore, English elm, teak, Honduras mahogany. State your reasons for considering that the timber you have placed at the head of your list is the one most liable to warp. (12.)

4. In teaching your pupils the manipulation of the jack plane, what faults or errors have you observed them to make most commonly, and what steps have you taken to help them to surmount the difficulties? (10.)

5. State briefly the advantages and disadvantages of the sloyd knife and tenon saw in the early stages of a manual training course, considered with respect to the mental and physical training which either exercise affords. (14.)

6. Assuming that manual training may be made an important factor in the formation of the character of a child, which system of teaching the more thoroughly attains this end—class teaching or individual teaching? State your reasons. (14.)

7. In devising a scheme of manual training, which of the following do you consider is of most real benefit to the mental development of the pupil:

(*a*) A scheme consisting entirely of models;

(*b*) A scheme consisting entirely of exercises;

(*c*) A scheme consisting of models and exercises interspersed?

Give briefly your arguments in favour of the scheme which you prefer. (12.)

8. Froebel taught: "Happiness is essential to the proper development of the child: hence his activity must be such as to give pleasure, it must be enjoyed." Discuss this principle with special reference to manual training. (14.)

9. Describe one teaching device of your own, which you have found beneficial in stimulating your pupils' power of observation. (12.)

10. Do you consider that ambidexterity should be taught in manual training classes? Give your reasons for or against. (12.)

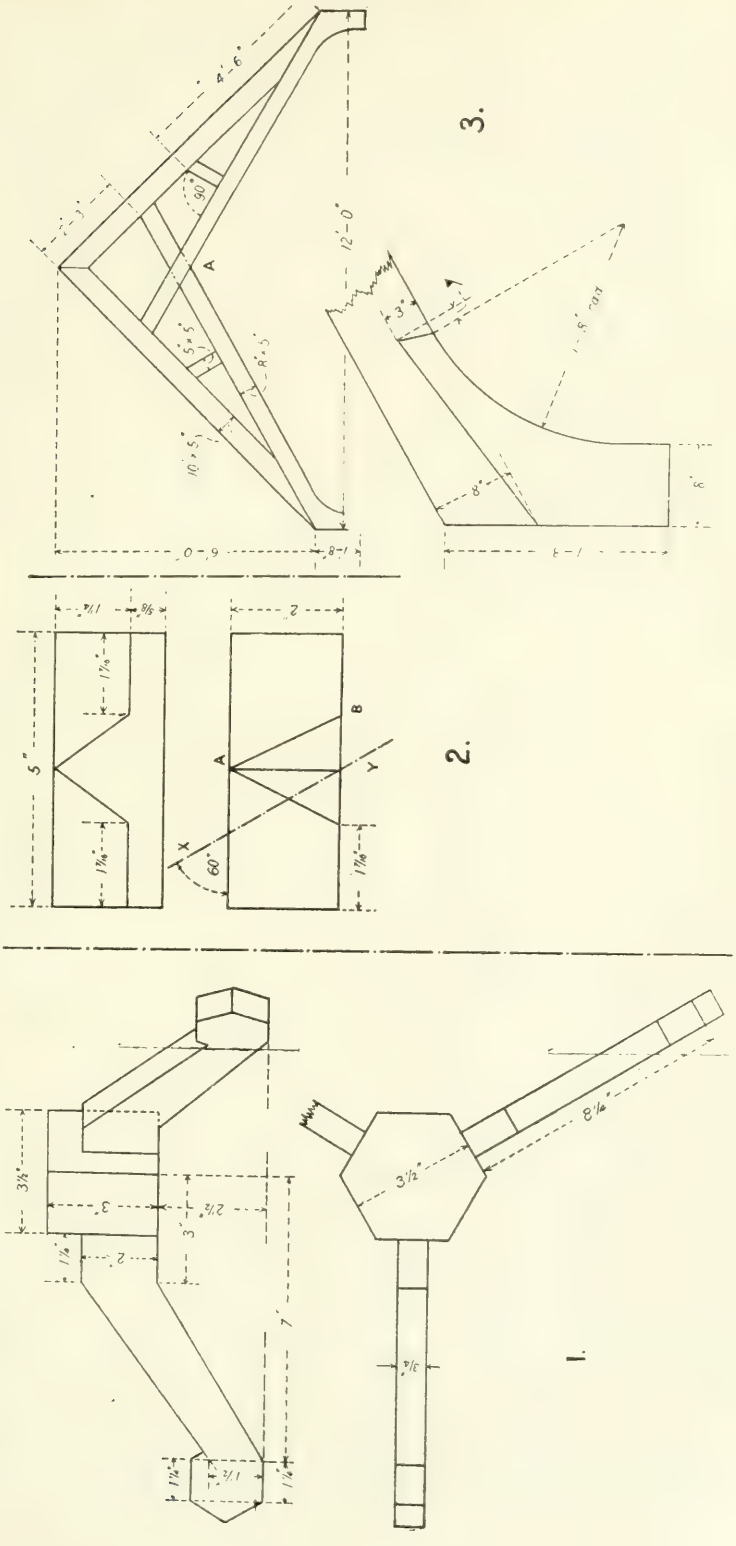
11. Write notes of a lesson on the firmer chisel to a class of first-year boys. Time, twenty minutes. Arrange the notes as under:

Heads.	Matter.	Method.

12. Say how, and to what extent, you think that manual training assists children in the development of the constructive faculty and the spirit of enquiry. (14.)

MANUAL TRAINING (WOODWORK) 1904. FINAL EXAMINATION.

DRAWING.



If this plan were carried out we should have many teachers of the highest intellectual capacity taking up these subjects.

Now that the University of Toronto has established a degree in Household Science, it is hoped that the same course will be followed in regard to Manual Training. It should not be necessary to wait until some public-spirited individual provides the money for the erection and equipment of a building for work of this kind. These are not met with every day and the species is somewhat rare in this Province. In connection with this matter the practice of Teachers' College is worthy of consideration. This is the department dealing with education in Columbia University, New York, taking rank also as a profession school with the Schools of Law, Medicine and Applied Science. The educational administration of the college is by departments, each of which has its own director and staff of instructors. The departments are twenty in number and amongst them are: Kindergarten, Fine Arts, Domestic Art, Domestic Science and Manual Training. Degrees are awarded on the satisfactory completion of these courses. The character of the ideal teacher of manual training has been eloquently described by Professor Calvin M. Woodward, Director of the Manual Training School and Dean of the School of Engineering of Washington University, St. Louis, Mo. This passage is to be found in the Annual Report of the Commissioner of Education for the United States, page 1026, and should be studied by every teacher. If the ideal, as he expresses it, is ever to be reached, the training the teacher is to receive must be comprehensive and thorough.

Industrial and Technical Education.

The rapidly growing interest in industrial and technical education is shown by the influential deputations sent to the Dominion Government from Boards of Trade, Manufacturers' Associations and Labour organizations asking the Federal authorities to appoint a Commission to consider the whole question and its application to the Dominion as a matter of national concern. The awakening of the manufacturers and producers of the country to a consciousness of the fact that the springs of power, the sources of energy which count for most in our national development, even along strictly industrial lines, are largely educational, is one of the most significant signs of the times. People seem never to have thought of this before: they are thinking of it now and it is to be hoped that the thought will be translated into some definite action.

As far as real technical education is concerned we have, as has been pointed out in previous reports, done nothing but skate very lightly around the edge of it, with the exception of the work done at the School of Practical Science, the School of Mines, and the Ontario Agricultural College. It cannot be doubted that industrial and vocational training is a matter of national concern and worthy the attention of all governments, both Provincial and Federal. Though the people to the south of us have done wonders along these lines, yet they are not satisfied with their progress. This is shown by the annual message of President Roosevelt delivered to the second session of the Fifty-ninth Congress on December 4th, 1906. This message contains the following passage:—

Technical and Industrial Training.

"It would be impossible to overstate (though it is, of course, difficult quantitatively to measure) the effect upon a nation's growth to greatness of

what may be called organized patriotism, which necessarily includes the substitution of a national feeling for mere local pride; with as a resultant high ambition for the whole country. No country can develop its full strength so long as the parts which make up the whole each put a feeling of loyalty to the part above the feeling of loyalty to the whole. This is true of sections and it is just as true of classes. The industrial and agricultural classes must work together, capitalists and wage workers must work together, if the best work of which the country is capable is to be done. It is probable that a thoroughly efficient system of education comes next to the influence of patriotism in bringing about national success of this kind. Our Federal form of government, so fruitful of advantage to our people in certain ways, in other ways undoubtedly limits our national effectiveness. It is not possible, for instance, for the National Government to take the lead in technical industrial education, to see that the public school system of this country develops on all its technical, industrial, scientific and commercial sides. This must be left primarily to the several States. Nevertheless, the National Government has control of the schools of the District of Columbia, and it should see that these schools promote and encourage the fullest development of the scholars in both commercial and industrial training. The commercial training should in one of its branches deal with foreign trade. The industrial training is even more important. It should be one of our prime objects as a nation, so far as feasible, constantly to work toward putting the mechanic, the wage worker who works with his hands, on a higher plane of efficiency and reward, so as to increase his effectiveness in the economic world, and the dignity, the remuneration, and the power of his position in the social world. Unfortunately at present the effect of some of the work in the public schools is in the exactly opposite direction. If boys and girls are trained merely in literary accomplishments, to the total exclusion of industrial, manual and technical training, the tendency is to unfit them for industrial work and to make them reluctant to go into it, or unfitted to do well if they do go into it. This is a tendency which should be strenuously combatted. Our industrial development depends largely upon technical education, including in this term all industrial education, from that which fits a man to be a good mechanic, a good carpenter, or blacksmith, to that which fits a man to do the greatest engineering feat. The skilled mechanic, the skilled workman, can best become such by technical industrial education. The far-reaching usefulness of institutes of technology and schools of mines or of engineering, is now universally acknowledged, and no less far-reaching is the effect of a good building or mechanical trades school, a textile, or watchmaking, or engraving school. All such training must develop not only manual dexterity but industrial intelligence. In international rivalry this country does not have to fear the competition of pauper labour as much as it has to fear the educated labour of specially trained competitors; and we should have the education of the hand, eye and brain which will fit us to meet such competition.

"In every possible way we should help the wage worker who toils with his hands and who must (we hope in a constantly increasing measure) also toil with his brain."

In England large sums are spent for the purpose of giving the youth of both sexes definite training bearing directly upon their life work. In addition to the sums spent by the central Government each local educational authority has the right to levy a rate the proceeds of which are devoted to purely technical education purposes, and in this way large sums are raised locally to supplement the efforts of the Government. In this matter of local

effort we are not conspicuous. There is a tendency to look to the Provincial Government for too much help and not rely sufficiently on local initiative and support.

A typical example of what local authorities are doing in England is shown by the City of Manchester. The Municipal School of Technology represents a financial value to the City of Manchester of over $1,500,000, and the city spends annually over $188,500 on industrial education. Many other English cities spend sums as large or larger than this amount in proportion to their population. In this material age the first question that is asked is "Will it pay?" and it can be shown beyond doubt that technical education not only pays in national reputation and happiness but pays even more markedly in dollars and cents. In 1903 an address was delivered before the American Society of Mechanical Engineers by Mr. J. M. Dodge of Philadelphia in which this question was fully answered. The accompanying chart was drawn up to illustrate the actual progress made by four groups of men working in the Mechanic Arts—the unskilled labour group, the shop-trained or apprentice group, the trade school group, and the technical school group. The first is the labourer, with but primitive and rudimentary training, working under the immediate and constant supervision of a boss, and earning, as the line on the chart indicates, $10.20 per week at the age of twenty-two, his line remaining horizontal through the period of his usefulness.

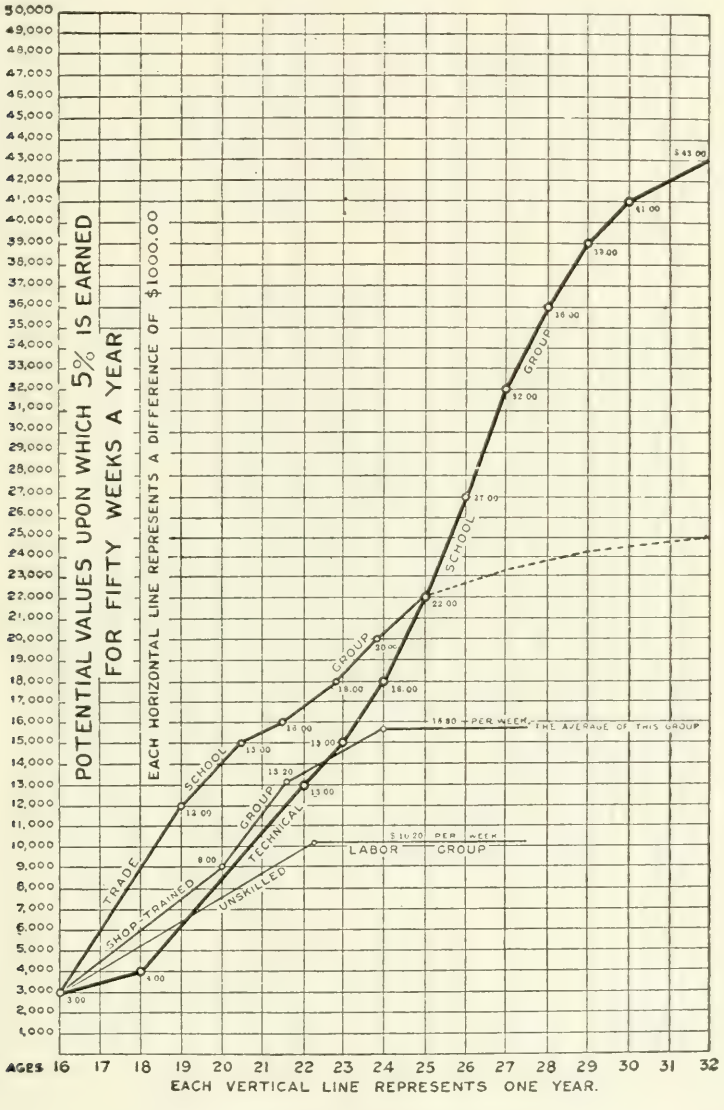
The second is the Apprentice or Representative of the shop-trained group and entering a machine shop at the age of sixteen and earning an average wage of three dollars per week for fifty weeks per year, making $150 or five per cent. on $3,000, which is his potential or invested value, upon which he draws his interest on pay days.

On the chart the horizontal lines represent amounts increasing from the lower line upwards by $1,000 each; starting at $1,000 and terminating at the top at $50,000, these representing Potential Values, upon which five per cent. is earned for fifty weeks per year. The vertical lines represent one year in time, beginning at the lower left-hand corner at sixteen and progressing in regular order until, at the lower right-hand corner we have thirty-two, representing in all a lapse of sixteen years.

To illustrate the progress of the four groups graphically, we indicate on the line representing sixteen years of age, and opposite the figure $3,000 the young man just entering his apprenticeship. We will consider him typical of the shop-trained group. Following the line to the right, we see his average progress in earning capacity through the ensuing years, noting that at the age of twenty he is earning $9 per week, which is five per cent. on $9,000, he having increased his Potential Value in four years by $6,000. We now note that his accumulated experience enables him to make more rapid progress for the next year and a half, and from the age of 20 to 21½ we find that his pay has increased to $13.20 and his Potential Value $15,800. Observation shows that five per cent. of the apprentices acquiring the machinist's trade rise above the line made by our average man, 35 per cent. follow the line closely, and that during the period of training 20 per cent. leave of their own accord; 40 per cent. are found unworthy or incompetent.

The third group are those fortunate enough to have had the opportunity of entering a trade school, which they do at sixteen years of age, devoting the next three years of their lives to acquiring a trade under competent instruction and at the same time adding to their store of rudimentary theoretical education. At the age of nineteen a trades' school man enters a machine shop and can command $12 per week, equal to the apprentice at twenty-one years of age. The three years in school have increased his Potential Value

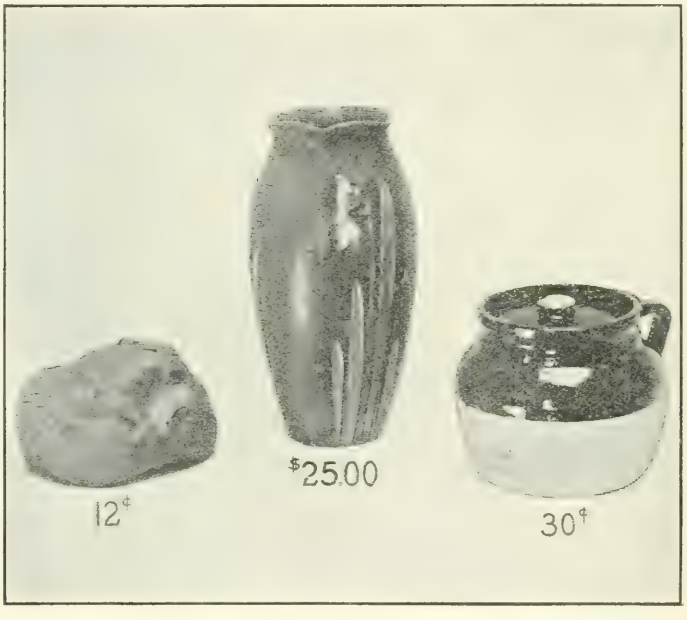
from $3,000 to $12,000, a gain of $9,000. Thus he has caught up with the apprentice entering the shop at sixteen and who has been working for five years. Progress of the trades' school group now follows a line which diverges from that of the regular apprentice, and by the time $15.80 is earned by the regular apprentice, the trades' school graduate is earning $20, with a Poten-



The money value of Technical Training.

tial Value of $20,000, or $4,200 greater than that of the shop-trained man. The trades' school line continues at substantially the same angle up to an earning capacity of $22 per week, and a Potential Value of $22,000. Data are lacking as to the further progress, but the presumption is that this line will bear off more toward the horizontal, eventually paralleling the line of the shop-trained man, but much higher on the chart.

The fourth group we will represent again by a boy of sixteen studying at school until his eighteenth year, and preparing himself for admission to one of our higher institutions of technical learning, such as the Stevens Institute, the Massachusetts Institute of Technology, Columbia, Cornell and the like, where, after a four years' course, or at the age of twenty-two, he is ready to begin practical work. The statistics upon which this chart is based show the average starting wage at $13 per week, or the same amount earned by the regular apprentice at the age of 21½, and by the trades' school graduate at the age of 19½. In other words, apparently a graduate of our technical schools has lost by his six years of preparatory study, having been beaten by the regular apprentice by six months and by the trades' school graduate by two and a half years. From this time, however, there develops a most interesting and instructive line of progress. The regular apprentice, who is earning $13.50 a week at the time the technical graduate is earning $13, is overtaken in six months, and we find both earning $14 per week, and the



technical graduate reaches the $15.80 line nearly one year before the regular apprentice. In other words, while it has taken the regular apprentice from his twenty-first to his twenty-fourth year, or three years, to increase his wages from $11.50 to $15.80 a week, the technical graduate has done the same in fifteen months.

Progress now continues on substantially the same line, and we find the technical graduate earning $22 per week and crossing the line of the trades' school group in three years' time, a worthy tribute to the higher education and attainment.

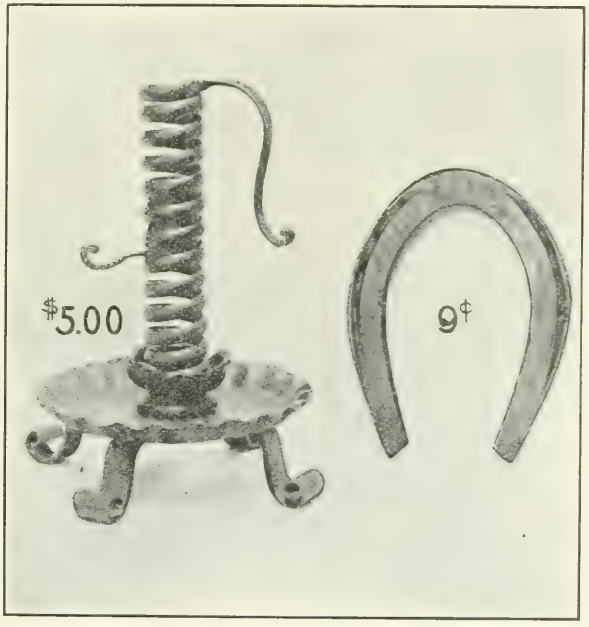
The line of the technical graduate now continues divergent from that of the trades' school graduate, with earning capacity regularly increasing, and a corresponding augmentation of Potential or Invested Value, until, at the age of thirty-two, or ten years after entering upon the practical work, we find our technical graduate earning $43 per week, and his Potential Value

at $43,000. In other words, six years of preparation have enabled him to distance the shop-trained man and the trades' school graduate overwhelmingly.

The value of the worker is increased owing to the increased value of the product he is able to turn out. The way the application of skill and knowledge applied to raw material increases its value is shown in the accompanying photographs.

The clay was a six-pound lump worth twelve cents. It could be made into the utilitarian bean pot selling for thirty cents. Made into the vase that twelve cent material by the addition of applied art and skill is fashioned into a thing of beauty and made worth $25. A similar increase in value due to the application of skill is shown in the comparison of the horseshoe and the wrought iron candlestick.

In connection with the Technical High School of Springfield, Mass., there is held an evening school of trades. In giving evidence before the



Massachusetts Commission on Industrial and Technical Education, the report of which was issued last April, Mr. Charles Warner, the Principal of that school, says: "It appears that every man who answered the enquiries (80 per cent.) acknowledged that he had received direct benefit from the instruction which he had received in the school. . . . Not one had failed to receive an increase in salary; six had received an increase of $2 per day; five $1.25; while the average increase in all classes was no inconsiderable sum."

Much more might be said to still further prove the statement that technical instruction has a decided dollar and cents value to the recipient and to the community in which he lives, but space will not allow.

In order to understand the full bearing and significance of technical education we must see how it affects human labour and industry, for the whole question is one of economics, though it also has a strong sentimental side. It has as much to do with practical life as the employment of the elec-

tric car instead of horses or the use of the electric light in lieu of farthing rushlights. Labour is said to be the application of two powers, first skill and then force. The product, as has been shown, is valuable in the proportion in which it shows skill. This is just as true in the making of a kitchen table as it is in the performance of a skilful surgical operation. The skilled workman is the one who produces something of greater value out of the same material than the unskilled workman and with less waste of time and material. He is, therefore, a more profitable agent to employ than the unskilled, and his work being more valuable he receives a higher compensation for it, while his employer finds a ready market, at high prices. The purchaser is better satisfied with the article and willing to pay a higher price for it than for one showng no skill. So the appplication of skill and taste in the production of an object gives (1) to the workman higher wages; (2) to the employer larger profits, and (3) more satisfaction to the purchaser.

So important is this question considered that various firms in the United States have established schools for apprentices. Amongst these are Hoe and Co., manufacturers of printing presses; Browne and Sharpe, machinists and manufacturers of fine tools, and the Edison Electrical Works. As the organization of these schools is full of suggestion, I give the following account of the methods adopted in connection with the school carried on by Browne and Sharpe from particulars supplied by the company. Applicants for admission to apprenticeship must be from sixteen to eighteen years of age. The first eight weeks of service constitutes a term of trial. The agreement provides that a premium be paid of fifty dollars and if the apprenticeship be completed satisfactorily the firm agrees to pay a sum of $150. The term of service is four years. Graduates of the Providence Manual Training School may have their term of apprenticeship shortened at the discretion of the company. Apprentices are paid for each hour of actual service, for the first year six cents, for the second year eight cents, for the third year ten cents, and for the fourth year fourteen cents. When a boy begins work he is loaned a set of tools. If he is accepted at the end of his trial term these tools are sold to him and his name marked on each. A handbook for apprentice machinists, published by the company, is given to them. Should a boy come from a distance and have to board, a good place is selected for him and if ill at any time put in the way of receiving proper medical attention. An excellent library is maintained at the company's expense free for the use of all. The firm employs one man whose duty it is to look after the apprentices, both in and out of the shops, see that they have fair treatment, proper instruction as to the use of tools and to settle any grievances. The boys attend the Rhode Island School of Design and the evening public schools, paying particular attention to drafting and mathematics. Forty boys a year are taken. Of those who complete their apprenticeship a few are remarkably well qualified, over three-quarters are turned out good intelligent machinists, while the rest are only passable.

Situation in Ontario.

The greater portion of the following was sent to the late Deputy Minister of Education in 1905, but as the observations then made are still pertinent to the situation I beg to repeat them, substituting the latest figures available.

The public school enrollment of this Province is 446,494. Of these 85,469 are in the fourth book and 16,313 in the fifth book, that is at about fourteen years of age a great many pupils disappear from the records. The high school enrollment is 28,661. This great disparity between public and

high school attendance is common to other countries, but that is no reason why we should calmly accept it and not attempt to find the causes and apply the remedies. In the report of the United States Commissioner of Labour this question is dealt with as follows:—

"The parents of these boys and young men are confronted with the question, Will it pay me to send my son to school for another year, or will he receive sufficient benefit from it to warrant my making the necessary sacrifice? The fact that such a very large proportion of the parents answer the question as they do is proof to me that something should be done towards affording more adequate means for secondary technical education. Thus from all sides—from the manufacturer who feels the need of more intelligent workers, from the young men who desire a training which will directly help them in a practical way, from their parents who have to make the sacrifice in order that they may get more training, from every direction—we are getting more and more proof of this need for the kind of technical training adapted to the needs of those who are going to enter our industries as artisans."

Public school education has had as its objective point the passing of the entrance examination, which a large proportion of the pupils never attempt.

The introduction of art, nature study, and constructive work should do and are doing much to give a more practical trend to public school education, but a curriculum on paper without efficient teachers is of little value. From observation and correspondence I am forced to the conclusion that a large number of our teachers are without the necessary knowledge to enable them to teach these subjects. A small departmental grant would encourage their introduction. This would only need to be continued until they were firmly established, and their value recognized. To give to the teachers the knowledge lacking, steps such as the following might be taken:—

1. The issue of bulletins by the Department.
2. Establishing centres of instruction.
3. Encouraging correspondence regarding difficulties.
4. The institution of small circulating libraries containing (say) twenty of the best books on these subjects, accompanied by a brief explanatory pamphlet.

Considerable attention should be devoted to practical work in the rural schools, which educate nearly 58 per cent. of the children of the Province. Art, constructive work and nature study should receive much thought and the teachers put in the way of giving efficient instruction. We might well adopt that provision in the school law of Nova Scotia, which prescribes that a "superior" school must possess one bench and a set of tools.

Some steps should be taken to retain the many pupils who disappear at the end of the fourth book, and their retention can only be secured by providing such education as will meet their needs in later life. The Royal Commission says: "As a consequence (of the introduction of these subjects) the school attendance is improved, the children remain at school to a more advanced age and much time is gained for the purposes of education. Manual Training and Household Science are now established in eighty centres, but there is room for extension and urgent need for disseminating information as to their advantages. As a sound basis for higher technical education they are of great value."

The success that has attended the travelling dairy school suggests the thought of a travelling Manual Training and Household Science school. An equipment for each subject could be purchased and teachers engaged. These might be located in one centre for six or twelve months and the authorities of the town or district would have every opportunity of observing the effects

of the work and judging its results. At the end of the fixed period both teachers and equipment could be moved to another centre. In this way more localities would be induced to take up the subjects.

Up to the present our educational system has concerned itself almost entirely with preparation for college life and the so-called learned professions, and those who have neither the inclination nor the opportunity to take up either have been neglected and not considered fit subjects for educational effort. Every interest in the Province demands consideration and schools of the following classes are required:—

1. Agricultural High Schools or classes.
2. Technical High Schools or classes.
3. Commercial High Schools or classes.
4. Academic High Schools.

Many of the smaller towns would not be able to support, and have no need of, a separate technical school, but an industrial side might well be established in connection with their high schools, embracing woodwork, metal work, household science, mechanical drawing, and science and art, and the instruction should have a practical relation to the work for which it is fitting the students.

The present type of high school meets the demand for academic training, but generally speaking does not offer facilities to those whose bent is towards industrial pursuits. They prepare for the university and for entrance to the teaching profession, but we have no feeder for the School of Practical Science, the School of Mines, or the Agricultural College.

We require an intermediate grade of school which shall establish a connection between the fourth and fifth books of the public school and the Agricultural College. This connection could be made by the formation in suitable localities, of schools in which agricultural operations and the sciences underlying them would form the major part of the instruction. The equipment of such a school should consist of garden plots, glass houses, manual training rooms, household science rooms, in addition to ordinary class rooms for academic work. Such a school would adequately equip pupils for the college, give an inclination towards country life and might reasonably be expected to arouse the interest of the people. The farmers' and womens' institutes should have their attention directed to these questions and their co-operation secured.

A school such as is suggested would serve as the secondary school for farmers. The first experiment of this kind was the Minnesota School of Agriculture. The course covers three winters of six months each, leaving the student on the home farm during the six crop months. Eighty-two per cent. of the graduates remain in agriculture and seventy per cent. actually return to the farm. This school has now five hundred students and the State is equipping it for double its present capacity. About one-third of the course of study is devoted to common high school studies, one-third to sciences and arts of agriculture and one-third to related sciences. The North Dakota College at Fargo and the University of Nebraska at Lincoln have followed this plan and each has now an agricultural high school with several hundred students. A large proportion of the students who enter these schools expect to remain on the farm, would not be so much attracted to other schools and probably would not go beyond the rural school.

There is also needed a type of school which will have special reference to the industrial life of the towns and cities. Such a school would attract a large number of those who at present never enter a high school, and do something while educating the student, towards supplying that training for

industrial life which the rapid decay of the apprenticeship system is now preventing.

Such a school should seek to—

1. Provide from one to four year courses for boys and girls who are inclined towards some form of productive industry.

2. Provide a continuation course for those who wish to specialize along particular lines.

3. Provide a comprehensive system of technical evening classes for those actually engaged in the trades.

Outside Hamilton, Toronto, and Brantford evening classes are practically non-existent. While agriculture is the staple industry, yet the different mechanical trades are of great importance and education specially designed to assist their intelligent practice is greatly required.

A few years ago there were six art schools in various parts of the Province. To-day two survive and these are engaged in a constant struggle to provide the necessary funds. They should be directed by the regularly constituted educational authorities, and placed on a sound financial basis. We need a Provincial Art School to which students of promise might come from various parts of the Province and thus avoid the necessity of going abroad.

We require an industrial museum which would be a standing exhibition of the capabilities, methods and triumphs of skilled and educated labour. Such a museum would do much to stimulate trade and industry, and is a leading feature in the technical educational systems of many foreign countries.

In closing this report, I beg sincerely to thank you, Sir, as well as the Deputy Minister and the Superintendent for the cordial help I have received towards carrying on the important work in which I have the honour to be engaged.

I am your obedient servant,

ALBERT H. LEAKE.

	Name of Model School.	Name of Principal.	Certificate of Principal.	Salary of Principal.	Year of appointment.	Time Principal devotes to Model School work daily during the term.	No. of assistants with first class certificates.	No. with second class.
1	Athens	C. R. MacIntosh	I	$800	1901	All day		4
2	Barrie	W. J. Hallet, B.A.	I	1,000	1893	"	1	7
3	Beamsville	H. J. Talbot	I	700	1905	"		4
4	Berlin	J. Suddaby	I	1,150	1877	4¾ hours		10
5	Bracebridge	Wm. Rannie	I	†280	1902	All day		5
6	Bradford	A. N. Scarrow	I	800	1902	"		4
7	Brampton	Jas. A. Underhill	I	950	1903	"	1	8
8	Caledonia	John B. Widdis	I	750	1902	"		3
9	Chatham	J. W. Plewes	I	1,300	1900	"	1	25
10	Clinton	W. R. Lough	I	900	1884	"		7
11	Cornwall	S. J. Keys, B.A.	I	1,100	1902	"		12
12	Durham	Thos. Allan	I	800	1888	"		5
13	Elora	B. Percy Overholt	I	800	1906	5½ hours	2	3
14	Forest	Chas. Ramsay	I	700	1906	" "		6
15	Gananoque	J. C. Linklater	I	1,150	1888	All day		8
16	Goderich	Jas. H. Tigert	I	900	1902	"	2	7
17	Hamilton	John B. Robinson, B.A.	I	1,200	1902	"	5	2
18	Ingersoll	H. F. McDiarmid	I	1,000	1885	"	2	12
19	Kincardine	John H. Garner	I	800	1906	"		3
20	Kingston	R. F. Greenlees	I	850	1902	"	3	42
21	Lindsay	G. E. Broderick	I	1,200	1888	"	1	19
22	London	G. B. Kirk	I	1,250	1900	"	1	8
23	Madoc	P. Huyck	I	750	1905	"	2	2
24	Meaford	M. N. Clark, B.A.	I	950	1899	"		8
25	Milton	W. F. Inman	I	800	1893	"	1	4
26	Minden	W. T. Arthurs	II	550	1904	4 hours		2
27	Morrisburg	C. D. Bouck	I	700	1903	5½ "	1	4
28	Mt. Forest	G. R. Theobald	I	950	1900	All day		7
29	Napanee	C. H. Edwards, B.A.	I	1,000	1899	"	1(B.A.)	6
30	Newmarket	J. F. Harvey, B.A.	I	1,000	1903	"	2	4
31	Norwood	R. H. Leighton	I	700	1902	"		4
32	Orangeville	M. N. Armstrong	I	800	1885	"		9
33	Owen Sound	T. A. Reed	I	1,100	1894	"	2	25
34	Parry Sound	A. M. Currie	I	800	1896	"		5
35	Perth	M. M. Jaques	I	1,000	1884	"		7
36	Picton	T. C. Tice	I	950	1905	"	1	7
37	Plantagenet Bilingual	V. Hector Gaboury	I	500	1906	"		1
38	Port Arthur	W. A. Stickle	I	1,150	1903	"	1	11
39	Port Hope	A. A Jordan	I	1,100	1903	"	1	13
40	Port Perry	R. F. Downey	I	800	1902	"		3
41	Prescott	H. W. Kerfoot, B.A.	I	1,000	1903	"		6
42	Renfrew	Jno. E Anderson, B.A.	I	850	1905	"		8
43	St. Thomas	*S. Silcox, B.A., D.Paed.	I	1,350	1899	"	2	8
44	Sault Ste. Marie	Jno. M. Kaine	I	1,100	1904	"	2	3
45	Sarnia	W. J. Karr, B.A.	I	800	1906	"		9
46	Simcoe	Isaac S. Rowat	I	800	1889	"	1	7
47	Stratford	*Jas. Russell Stuart	I	1,300	1887	"	4	25
48	Strathroy	Thomas Dunsmore	I	850	1882	"		9
49	Toronto	W. E. Groves	I	1,750	1895	"	1	10
50	Toronto Junction	Wm. Wilson	I	1,200	1889	"	1	4
51	Vankleek Hill	S. A. Hitsman	I	820	1904	"	1	3
52	Walkerton	James Campbell	I	850	1906	"	1	7
53	Welland	John Flower	I	750	1905	"		4
54	Whitby	J. A. Brown	I	950	1877	"	4	3
55	Windsor	David M. Eagle	I	1,100	1901	"		7
56	Woodstock	S. Nethercott	I	1,000	1893	"		22
	Totals	10 University Graduates	55 I; 1 II	$948			48	461

* Also Inspector of Public Schools. † For the term. ‡ Average annual salary.

MODEL SCHOOLS, 1906.

	No. with 3rd class.	No. with other class.	Time assistant received Principal from Public School work daily.	Is separate room provided.	No. of volumes in professional library.	Government grant.	Municipal grant.	Fees.	No. of divisions in school or schools.	No. of divisions used for Model School purposes.	No. of students sent at one time to observe.	No. of students sent at one time to teach.	Length of time students are trained before being sent to the divisions to observe.	Length of time students are trained before being sent to the divisions to teach.
1	1		All day.	Yes	30	$150	$150 00	$150 00	5	5	6	6	4 weeks	6 weeks
2			"	"	150	150	150 00	155 00	8	8	4	4	6 "	6 "
3			"	"	194	150	150 00	80 00	4	4	4	4	4 "	5 "
4			"	"	150	300	300 00	110 00	11	9	7	7	6 "	6½ "
5	2		"	"	150	300	.....	65 00	10	7	2	2	6 "	7 "
6			"	"	156	150	150 00	165 00	4	4	4 or 5	4or5	6 "	7 "
7			"	"	163	150	250 00	115 00	9	7	4	4	6 "	7 "
8			"	"	175	150	150 00	135 00	4	4	7	7	7 "	7 "
9			"	"	580	150	150 00	390 00	29	29	4	4	4 "	6 "
10			"	"	170	150	150 00	225 00	8	8	5 to 6	5to6	5 "	5 "
11			"	"	300	150	150 00	170 00	12	11	3	3	3 "	3 "
12		1	5 hours.	"	100	150	150 00	125 00	8	6	4	4	4 "	8 "
13			5½ "	"	187	150	150 00	190 00	5	5	8	8	6 "	7 "
14			All day.	"	166	150	150 00	170 00	6	6	5 or 6	5or6	4 "	7 "
15	3		"	"	206	150	150 00	40 00	12	6	2	2	6 "	7 "
16	2		"	"	168	150	150 00	220 00	11	11	5 or 6	5or6	6 "	6 "
17	2	1	"	"	650	150	150 00	195 00	10	9	2 or 3	2or3	1 "	7 "
18			"	"	171	150	150 00	95 00	14	12	4	4	5 "	7 "
19	3		"	"	157	150	150 00	100 00	7	6	3 or 4	3or4	6 "	6 "
20			"	"	230	150	150 00	130 00	45	41	3 to 5	3to5	7 "	7 "
21			"	"	144	150	150 00	245 00	20	19	3	3	3 "	6 "
22			"	"	146	150	87 50	240 00	11	9	5	5	2 "	2 "
23	1		"	"	275	150	150 00	105 00	5	5	4 or 5	4or5	4 "	6 "
24			"	"	161	150	150 00	150 00	9	8	4	4	6 "	7 "
25	1	1	"	"	164	150	200 00	155 00	7	5	2 to 5	3to6	6 "	6 "
26			"	"	205	150	150 00	30 00	3	3	3	3	7 "	8 "
27	2		5½ hours	"	150	150	150 00	170 00	7	7	6	6	5 "	6 "
28			" "	"	175	150	150 00	245 00	7	7	7	7	7 "	7 "
29	1	2	All day.	"	300	150	150 00	135 00	10	9	3	3	6 "	6 "
30			"	"	186	150	175 00	140 00	7	7	4	4	6 "	7 "
31			"	"	149	150	150 00	132 50	5	5	13	5	4 "	4 "
32	1		"	"	169	150	150 00	170 00	10	10	3 or 4	3or4	7 "	7 "
33	1	6	"	"	230	150	150 00	240 00	12	12	4	4	5 "	7 "
34	2	2	"	"	185	300	.....	80 00	9	6	3	3	6 "	6 "
35	3		"	"	180	150	150 00	10 00	10	10	4 & 5	4& 5	7 "	7 "
36	1		"	"	140	150	150 00	115 00	9	8	3	3	5 "	5 "
37		2	"	"	30	.....	450 00	.....	3	3	4 or 5	4or5	1 "	7 "
38			"	"	83	300	.....	.....	12	12	1	1	5 "	6 "
39	1		"	"	200	150	380 00	328 00	15	15	4 to 5	4—5	6 "	6 "
40	3		"	"	173	150	150 00	95 00	6	6	3 to 4	3to4	6 "	6 "
41	1		"	"	210	150	150 00	150 00	7	7	2 or 3	2or3	7 "	7 "
42	1		"	"	150	150	150 00	285 00	9	9	6 or 7	6—7	4 "	5 "
43	1		"	"	187	150	150 00	225 00	11	11	5 or 6	5or6	5½ "	5½ "
44	2		"	"	80	300	.....	90 00	7	7	4	4	6 "	6 "
45			.....	"	165	150	150 00	170 00	9	8	4 or 5	4or5	6 "	6 "
46			All day.	"	224	150	150 00	160 00	8	8	4	4	4 "	5 "
47	1		.....	"	578	150	150 00	330 00	30	30	3	3	6 "	6 "
48			All day.	"	177	150	150 00	190 00	9	9	3 or 4	3or4	6 "	6 "
49		3	"	"	130	150	.....	130 00	12	11	26	2to3	2 "	6 "
50			"	"	150	150	175 00	95 00	11	11	3	3	6 "	6 "
51			"	"	211	150	450 00	95 00	4	4	4 or 5	4or5	3 "	7 "
52			"	"	175	150	150 00	180 00	9	9	4	4	6 "	6 "
53	1		"	"	109	150	150 00	110 00	5	5	4 or 5	4or5	5 "	6 "
54			"	"	200	150	150 00	90 00	7	7	6	6	6 "	7 "
55	1	1	"	"	166	150	150 00	235 00	9	9	5 or 6	5or6	4 "	5 "
56	5	2	"	"	300	150	150 00	170 00	30	20	2	2	6 "	8 "
	44	21	.....	.....	10,910	9,000	8,767 50	8,150 50	.....	.....	.....	.....	.....	.....

APPENDIX P.—COUNTY

Name of Model School.	No. of weeks students teach in the divisions.	No. of hours per day.	Number of classes in the divisions used for Model School purposes.	Average number of lessons taught by each student during the term.	Average number of lessons each class will be taught by all the students during the term.	Average length of such lessons.	Time students remain in a division before passing to another.
1 Athens	6 to 7	5	13	20	46	20 minutes	1 week
2 Barrie	8	1	18	19	32	18 "	1 "
3 Beamsville	8	2	9	26	46	20 "	1 "
4 Berlin	6	1¾	16	12	15	25 "	1 "
5 Bracebridge	6	1	7	20	37	20 "	4 days.
6 Bradford	6	1½	10	16	53	20 "	4 "
7 Brampton	6	1 to 1½	15	18	27	20 "	4 "
8 Caledonia	6	2½	10	14	40	25 "	1 or 1½ weeks
9 Chatham	6	1½	35	19	43	20 "	1 week
10 Clinton	6	1¼ to 2½	18	17	22	18 "	3 to 4 days.
11 Cornwall	5	1½	22	18	27	15 "	2 days.
12 Durham	4	1½	14	15	27	20 "	3 "
13 Elora	5	1½	12	14	45	25 "	1 day
14 Forest	6	1½	17	18	36	20 "	1 week
15 Gananoque	5	2	13	20	13	20 "	1 "
16 Goderich	5	1¾	32	20	27	20 "	4 days.
17 Hamilton	7	1	126	22	4	20 "	2 "
18 Ingersoll	5	1½	15	9	11	18 "	4 "
19 Kincardine	6	1½	18	24	24	20 "	1 week
20 Kingston	7	1 to 1¾	43	16	10	20 "	1 "
21 Lindsay	5	1¾	50	20	20	20 "	2 days.
22 London	10	1	9	16	85	20 "	2 "
23 Madoc	7	2½ to 3	14	20	30	15 "	2 "
24 Meaford	5	1½	10	20	44	18 "	2 "
25 Milton	6	1¾	18	20	31	20 "	1 week
26 Minden	5	1½	13	24	11	20 "	1 day
27 Morrisburg	6	1¾ to 2	10	19	74	20 "	1 week
28 Mount Forest	5	2½	16	14	43	18 "	2 days.
29 Napanee	5	1 to 1½	18	25	37	25 "	1 week
30 Newmarket	6	1¼ to 1½	20	22	24	25 "	1 "
31 Norwood	6	1½	11	15	34	20 "	2 days.
32 Orangeville	6	1¾	20	18	30	20 "	1 week
33 Owen Sound	4	1	21	18	41	20 "	2 days.
34 Parry Sound	6	1	10	22	37	20 "	1 week
35 Perth	7	1½	20	18	38	20 "	1 "
36 Picton	8	1	11	23	48	20 "	4 days.
37 Plantagenet	6	2½	11	20	25	25 "	1 week
38 Port Arthur	6	1¾	16	29	13	20 "	1 "
39 Port Hope	5	2	18	14	44	20 "	1 "
40 Port Perry	6	1 to 1½	12	23	37	20 "	1 "
41 Prescott	7	1½	15	21	29	20 "	1 "
42 Renfrew	8	1½	15	20	76	25 "	2 days.
43 St. Thomas	6½	1½	13	20	60	20 "	4 "
44 Sault Ste. Marie	6	1½	7	20	51	20 "	1 week
45 Sarnia	7	1¾	20	21	36	20 "	1 "
46 Simcoe	5	1¼	16	14	28	20 "	2 days.
47 Stratford	6	1	80	25	21	20 "	1 week
48 Strathroy	6	1 to 1½	27	24	34	20 "	2 to 3 days
49 Toronto	4	1 to 1¼	12	20	43	25 "	1 day
50 Toronto Junction	6	1	14	18	24	20 "	3 days.
51 Vankleek Hill	4	2	11	20	35	20 "	1 week
52 Walkerton	5	1½	12	18	54	20 "	3 days.
53 Welland	7	1¼ to 1½	11	15	30	20 "	2 "
54 Whitby	6	2½	17	25	28	20 "	4 "
55 Windsor	5	2½	11	20	85	20 "	2 "
56 Woodstock	5	1½	20	21	36	30 to 45 mins.	4 "
Totals							

MODEL SCHOOLS, 1906.—*Concluded.*

	Number of students on roll.	Male.	Female.	Number who passed the examination.			Number with Senior Teachers standing.	Number with Junior Teachers standing.	Number with District certificate standing, or standing lower than Junior Teachers'	Allowance made by Trustees to Principal's assistant or assistants.	Number of renewals granted by the Board (except those good for six months to enable the teacher to attend Normal.)	Average age of students.
				Male.	Female.	Total.						
1	30	4	26	4	26	30	1	17	12	$135	17	19 yrs.
2	31	6	25	5	25	30	....	18	13	.....	14	18.8 "
3	16	3	13	3	13	16	....	8	8	160	6	19 "
4	21	6	15	5	8	13	1	13	7	140	.....	19 "
5	13	....	13	....	12	12	....	6	7	.....	4	18 "
6	33	6	27	6	26	32	....	15	18	150	15	17.82 "
7	24	7	17	6	17	23	2	7	15	125	.....	19.5 "
8	27	4	23	3	23	26	1	16	10	150	.....	18 "
9	78	19	59	19	56	75	6	44	28	260	14	18 "
10	45	16	29	16	29	45	3	34	8	140	14	18.8 "
11	34	5	29	5	28	33	2	21	11	.....	14	18 "
12	25	5	20	4	20	24	2	11	12	200	7	18 "
13	38	10	28	10	28	38	6	26	6	150	1	18.75 "
14	34	9	25	9	25	34	1	33	.....	225	.....	18 "
15	8	....	8	....	8	8	....	6	2	175	6	18 "
16	44	13	31	13	30	43	5	35	4	175	14	18.6 "
17	39	7	32	7	30	37	1	28	10	.....	12	19.33 "
18	19	4	15	4	15	19	....	15	4	200	2	19 "
19	20	4	16	4	16	20	1	15	4	200	6	18.5 "
20	27	....	27	....	27	27	2	18	7	.....	14	18.5 "
21	49	16	33	16	32	48	....	36	13	.....	13	18.90 "
22	48	10	38	10	36	46	3	32	13	250	3	18.9 "
23	21	5	16	4	16	20	5	6	10	150	12	18.6 "
24	22	10	12	10	12	22	3	13	6	200	5	18.5 "
25	28	7	21	7	20	27	2	19	7	250	6	18.57 "
26	6	....	6	....	6	6	....	.....	6	50	6	18 "
27	39	12	27	12	27	36	6	27	6	200	5	19 "
28	49	15	34	15	34	49	4	36	9	130	.....	18.1 "
29	27	8	19	8	19	27	2	18	7	350	12	19 "
30	28	8	20	8	20	28	....	28	.....	175	2	18 "
31	26	7	19	6	19	25	2	16	8	130	6	18 "
32	34	4	30	4	30	34	....	20	14	144	11	18 "
33	48	13	35	12	32	44	8	31	9	.....	4	18.25 "
34	17	....	17	....	17	17	....	1	16	.....	13	19 "
35	42	7	35	7	32	39	1	37	4	178	12	18 "
36	23	6	17	6	16	22	....	21	2	150	7	18 "
37	14	2	12	2	12	14	....	.....	14	.....	.....	17.95 "
38	7	....	7	....	7	7	....	3	4	225	3	18.4 "
39	67	16	51	14	47	61	9	42	16	.....	2	18.33 "
40	19	5	14	5	14	19	....	13	6	200	14	18.52 "
41	19	6	13	6	13	19	....	16	3	200	6	19 "
42	57	1	56	1	56	57	1	21	35	150	20	18.4 "
43	44	13	31	12	28	40	5	33	6	.....	.....	18.5 "
44	18	1	17	1	17	18	2	4	12	200	2	20 "
45	34	4	30	4	30	34	1	28	5	.....	.....	19 "
46	32	12	20	10	17	27	....	21	11	160	7	18 75 "
47	66	13	53	10	51	61	15	41	10	.....	1	18.5 "
48	38	9	29	9	29	38	2	36	.....	175	.....	18.73 "
49	26	....	26	....	24	24	1	24	1	302	2	19.4 "
50	19	4	15	4	15	19	1	13	5	.....	3	18 "
51	19	6	13	6	13	19	...	11	8	170	12	19.6 "
52	36	17	19	17	19	36	1	20	15	175	7	18 "
53	22	2	20	2	20	22	2	11	9	150	5	18.7 "
54	19	5	14	5	14	19	3	12	4	180	2	18.5 "
55	47	9	38	9	38	47	3	29	15	200	10	18.74 "
56	34	8	26	8	26	34	3	29	2	.....	5	18.44 "
	1,750	389	1,361	373	1,320	1,693	119	1,134	497	..	..	18.55 yrs.

APPENDIX Q.—PROVINCIAL NORMAL AND MODEL SCHOOLS, ONTARIO NORMAL COLLEGE.

I. PROVINCIAL NORMAL AND MODEL SCHOOLS, TORONTO.

1907.

1. Staff of Toronto Normal School.

Wm. Scott, B.A.	Principal.
W. H. Elliott, B.A.	Vice-Principal.
A. C. Casselman	Drawing Master.
A.T. Cringan, Mus. Bac.	Music Master.
Jas. H. Wilkinson	Instructor in Manual Training
Miss Nina A. Ewing	Instructor in Household Economics.
Miss Mary E. Macintyre	Instructor in Kindergarten Principles.
Mrs. Jean Somers	Instructor in Calisthenics.
Mrs. Emma Macbeth	Instructor in Needlework.
Q.-M. Sergt. J. S. Legge	Instructor in Drill.
Mrs. M. W. Brown	Instructor in Reading.

Students Admitted, Session 1906-7

Male	5
Female	146
Total	151

2. Staff of the Provincial Model School, Toronto.

Angus McIntosh	Head Master.
Miss M. Meehan	First Female Assistant
R. W. Murray, B.A.	First Male Assistant.
Miss May K. Caulfeild	Assistant.
Miss A. F. Laven	Assistant.
Thomas M. Porter	Assistant.
Milton A. Sorsoleil	Assistant.
Miss F. M. Taylor	Assistant.
Miss A. E. G. Wilson	Assistant.
Miss Hope Merritt	Assistant.
A. C. Casselman	Drawing Master.
A. T. Cringan, Mus. Bac.	Music Master.
Miss Mary E. Macintyre	Kindergarten Directress.
Miss Ellen Cody	Kindergarten Assistant.
Mrs. Jean Somers	Instructor in Calisthenics.
Mrs. Emma Macbeth	Instructor in Needle Work.
Q-M. Sergt. J. S. Legge	Drill Master
Guy de Lestard	French Master.
Jas. H. Wilkinson	Instructor in Manual Training
Miss Nina A. Ewing	Instructor in Household Economics.

Number of pupils in 1906	542
Number of Kindergarten pupils in 1906	55

II. PROVINCIAL NORMAL AND MODEL SCHOOLS, OTTAWA.

1907.

1. Staff of Ottawa Normal School,

James F. White, LL.D.	Principal.
S. B. Sinclair, M.A., Ph.D.	Vice Principal
J. A. Dobbie	Drawing and Writing Master.
T. A. Brown	Music Master.
Miss E. H. Keyes, B.E.	Instructor in Elocution and Physical Culture.
Miss Eliza Bolton	Lecturer on Kindergarten Principles.
Alice E. Robertson	Lecturer on Household Science.
J. S. Harterre	Instructor in Manual Training.

Students Admitted, Session 1906-7.

Male	4
Female	89
Total	93

2. Staff of Provincial Model School, Ottawa.

J. H. Putman, B.A.	Head Master.
J. F. Sullivan	First Assistant.
F. A. Jones	Second Assistant and Drill Instructor.
Miss M. R. Elliott	Third Assistant.
Miss M. E. Butterworth	First Female Assistant.
Miss Evelyn Weir	Second Female Assistant.
Miss A. G. Hanahoe	Third Female Assistant.
Miss J. Foster	Fourth Female Assistant.
Miss Eliza Bolton	Kindergarten Directress.
Miss A. H. Baker	Kindergarten Assistant.
J. A. Dobbie	Drawing and Writing Master.
T. A. Brown	Music Master.
Miss E. H. Keyes, B.E.	Teacher of Physical Culture.
Miss A. Enid Robertson	Teacher of Domestic Science.
J. Fleury	French Teacher.
J. S. Harterre	Manual Training Instructor.

Number of pupils, 1906	334
Number of Kindergarten pupils, 1906	59

III.—PROVINCIAL NORMAL SCHOOL, LONDON.

1907.

Staff of London Normal School,

F. W. Merchant, M. A., D. Pæd.	Principal.
John Dearness, M. A.	Vice Principal.
S. K. Davidson	Drawing Master.
Fred. L. Evans	Music Master.
Miss Ada Butchart	Instructor of Household Science.
Albert Slatter	Physical Instructor.
Miss Jean R. Laidlaw	Teacher of Kindergarten Principles.
Sugden Pickles	Manual Training Instructor.

Students Admitted, Session 1906–7.

Male	12
Female	89
Total	101

IV. ONTARIO NORMAL COLLEGE.

1907.

Officer:

R. A. Thompson, B.A., Acting Principal.

Faculty:

F. Tracy, B.A., Ph.D.	Lecturer on Philosophy and History of Education.
A. H. Abbott, B.A., Ph.D.	Lecturer on Psychology
R. A. Thompson, B.A.	Lecturer on School Management.
J. B. Turner, B.A.	Lecturer on Methods in Chemistry, Botany and Zoology.
J. T. Crawford, B.A.	Lecturer on Methods in Mathematics
W. M. Logan, M.A.	Lecturer on Methods in Classics.
E. S. Hogarth, B. A.	Lecturer on Methods in Modern Languages
F. F. Macpherson, B.A.	Lecturer on Methods in Literature, Composition, Reading and Elocution.
S. A. Morgan, B.A., D.Paed.	Lecturer on Methods in English Grammar and Rhetoric.
A. Paterson, M.A.	Lecturer on Methods in History and Geography.
J. Gill, B.A., B.Paed.	Lecturer on Methods in Physics.
J. C. McCabe, M.D.	Lecturer on School Hygiene and Sanitation.
G. L Johnston, B.A.	Lecturer on Writing and Drawing.
Miss M. C. Macpherson, B.A.	Domestic Science Instructor.
W. Bailey	Manual Training Instructor.
I. Johnson	Music.
J. J. Syme, Sergt.	Drill, Gymnastics and Calisthenics.

Students Admitted, Session, 1906-1907.

Male	52
Female	139
Total	191

APPENDIX R.—HIGH SCHOOL CADET CORPS, 1906.

Name of School.	Number of Officers, N. C. Officers, and Boys present at time of inspection.	Drill.	Remarks of Militia Officers on the Efficiency of the Corps.
Arthur	37	Very good	Satisfactory
Barrie	59	Very good	Satisfactory
Brantford	47	Very good	Satisfactory
Brockville	32	Good	Satisfactory
Cobourg	47	Very good	Satisfactory
Collingwood	40	Good	Satisfactory
Dundas	39	Good	Fairly satisfactory
Galt	35	Very good	Satisfactory
Guelph	54	Excellent	Satisfactory
Hamilton	41	Good	Satisfactory
Ingersoll	48	Excellent	Satisfactory
Lindsay	39	Very good	Satisfactory
London	41	Very good	Satisfactory
Morrisburg	35	Good	Satisfactory
Mount Forest	37	Very good	Satisfactory
Napanee	43	Very good	Satisfactory
Niagara Falls	36	Fair	Unsatisfactory
Norwood	24	Good	Satisfactory
Orillia	39	Indifferent	Fair only
Ottawa	55	Very good	Satisfactory
Owen Sound	50	Good	Satisfactory
Peterborough	41	Good	Satisfactory
Port Perry	31	Good	Very satisfactory
Ridgetown	41	Good	Satisfactory
St. Catharines	39	Very good	Very satisfactory
St. Thomas	48	Very good	Satisfactory
Sarnia	33	Good	Satisfactory
Seaforth	45	Fair	Satisfactory
Strathroy	30	Good	Satisfactory
Toronto:			
Harbord	47	Fair	Fairly satisfactory
Jameson	39	Fair	Satisfactory
Jarvis	46	Very good	Satisfactory
Public Schools, Toronto:			
Jessie Ketchum	48	Very good	Satisfactory
Dufferin	50	Good	Satisfactory
Ryerson	37	Good	Satisfactory
Givens Street	45	Good	Satisfactory
Wellesley Street	35	Very good	Satisfactory
Parkdale	46	Good	Satisfactory
Uxbridge	40	Good	Satisfactory
Vankleek Hill	39	Good	Satisfactory
Woodstock	75	Excellent	Satisfactory
Total	1733 41 Corps		

BECK SHIELD COMPETITION.

Colonel J. Peters, D.O.C. Military District No. 1, reported on 11th June, 1906, that the following scores were made by boys from the different Cadet Corps in his District in the recent competition for the Beck Shield. The excellent score of 175, out of 200, made by the Seaforth Boys is worthy of notice.

Seaforth	175	Sarnia	129
Ingersoll	170	Guelph	129
Strathroy	147	Mount Forest	119
Arthur	146	London	92
St. Thomas	138		

APPENDIX S.—SUPERANNUATED TEACHERS.

(Continued from Report of 1905.)

* I. Allowances Granted during 1906.

Register Number.	Name.	Age.	Post Office.	Years of Service.	Allowance.
1148	Crane, George	69	Toronto	30½	213 50
1149	Hanna, John	60	Mount Forest	27	183 00
1150	Macdonald, Adam Fergus	70	Toronto	49½	336 50
1151	Masales, Geo. Washington	62	Woodstock	14½	101 50
1152	Coyne, Maria H	60	London	40½	283 50
1153	Clapp, David Philip	56	Harriston	34½	241 50
1154	Hamilton, George	60	Stratford	34½	235 00
1155	Dunn, Hannah Olivia	63½	Toronto	42	294 00
1156	Clendenning, Wm. Scott	63	Walkerton	44½	305 50
1157	Kilpatrick, Samuel Jas.	60	Brockville	18	118 00
1158	†Hutson, Andrew	58	Victoria Harbor	36	244 50
1159	†Williams, Eliza Anne	67	Toronto	42	294 00
1160	†Rankin, Wm. Kyle	60	Barrie	10	70 00
1161	†McTavish, Malcolm	74	Bowmanville	44	264 00
1162	†McAllister, Samuel	72	Toronto	48	326 00

2. Summary for Years 1882–1906.

Year.	Number of teachers on list.	Expenditure for the year.	Gross contributions to the fund.	Amount refunded to teachers.
		$ c.	$ c.	$ c.
1882	422	51,000 00	13,501 08	3,660 10
1887	454	58,295 33	1,489 00	3,815 80
1892	456	63,750 00	1,313 50	786 86
1897	424	62,800 33	847 00	620 27
1902	407	64,244 92	1,073 50	722 78
1903	398	63,267 43	996 00	470 25
1904	392	64,259 75	934 75	987 48
1905	388	62,663 55	545 00	940 15
1906	382	63,190 00	667 00	542 87

Six teachers' subscriptions were withdrawn from the fund during 1906.

*As the sum of $4 is deducted from each Superannuated Teacher's allowance, as subscription to the fund, the payments were $4 less in each case than given in this list.

†Allowance commences with 1907.

APPENDIX T.—LIST OF CERTIFICATES ISSUED BY THE EDUCATION DEPARTMENT, 1906, ETC.

1. Public School Inspectors.

Andrews, David, M.A.
Carscadden, Thomas, B.A.
Fetterley, Hiram B., B.A.
McNabb, George Gibbon, M.A.
Mooney, William Thomas, B.A.
Mulloy, Chas. Wesley, B.A.
Reid, Robert, B.A.
Simpson, Ernstein, B.A.
Smith, Gilbert Acheson, B.A.
Speers, John Albert, M.A.
Trench, Wm. Wycliffe Anson, B.A.

2. High School Principals and Specialists.

Andrews, David, M.A.
Andrews, Robert T., B.A. (Classics).
Bishop, Chas. Peter, B.A. (Commercial).
Brown, Percy William, B.A. (Science).
Burnham, Archibald M., B.A. (Moderns and History).
Campbell, Archibald Louis, M.A.
Dickey, Mary Ada, B.A., (Moderns and History).
Fairchild, Austin H., B.A. (Mathematics).
Fetterly, Hiram B., B.A.
Fraser, James William, B.A.
Galbraith, Thomas Maxwell, B.A.
Hamilton, William J., B.A. (Science).
Hedley, William Powell, B.A. (Mathematics).
Henderson, James Vanwyck, B.A. (Classics).
Hodgson, John Eastwood, M.A. (Classics and English).
Hume, John Patterson, B.A. (Science).
Jeffries, John, B.A. (English and History, French and German).
Keefe, Reuben Daniel, B.A.
Lehmann, Carl August King, B.A. (Science).
McGuire, James, M.A. (Science).
McNab, George Gibbon, M.A. (Mathematics).
Michell, William Charles, B.A. (Classics).
Millar, Fred. Gourlay, B.A.
Mooney, William Thomas, B.A.
Norman, Lambert, B.A. (Commercial).
Race, Wilfred B., B.A., (Moderns and History).
Ramsay, William, B.A. (Classics).
Robertson, George D., B.A. (Commercial).
Sprung, Whitfield Lyman, B.A. (Mathematics).
Trench, William Wycliffe Anson, B.A.
Voaden, Arthur, B.A. (Commercial).
Webster, Samuel Charles, B.A.
Williams, Lorne Joseph, B.A.

3. High School Assistants and Specialists.

Anderson, Lillie C.
Archer, Mary Alice.
Barnes, Chas. Lancelot, B.A.
Berlanquet, Hugh Smith, B.A. (Classics).
Bibby, Maria Victoria, B.A. (Moderns and History).
Boyd, Annie Alicia, M.A. (Science).
Bridgman, Clara Mary (Commercial).
Buchanan, John Alex. (Commercial).
Cole, Agatha St. Osyth, B.A. (Moderns and History).
Corrigan, Eugene.
Dowkes, William J.
Ewing, Florence May, B.A.
Ferguson, Elma Slater.
Fortner, Theodore G., B.A. (Moderns and History).
Galbraith, Thos. Maxwell.
Girdwood, Arthur Reginald, B.A. (Mathematics).
Hagan, James William.
Halnan, Lemen R., B.A. (Mathematics).
Hindson Hilda Mary.
Hubbard, Joseph J.
Jenkins, Myrtle Mellaney.
Jennings, Edwin William, B.A.
Kraft, Ernestine Lissette.
Lafferty, Isabella Sarah Euphemia, B.A.
Lunny, Rosemary, B.A.
Mairs, Ethel Matilda, B.A.
Mara, Ida M.
McRae, Donella Maud, B.A. (Moderns and History).
Miller, Eva Matilda, B.A.
Ramsay, James Alex.
Reesor, Lillian M. (Commercial).
Skitch, Ernest Frederick.
Smith, Annie Maria, B.A.
Taylor, Mabel Annie.
Williams, Walter Herbert, M.A. (Moderns and History).
Willson, Alice M., B.A. (French and German).
Wilson, Mary Agnes, B.A. (Moderns and History).

4. Summary of Public School Teachers' Certificates.

	Male.	Female.	Total.
First Class	37	58	95
Second Class	16	290	306
Third Class, and District, per County Model School reports	373	1320	1693
Manitoulin District Model Schools		25	25

5. First Class Certificates.

Alexander, Nessie.
Ardley, Mary Osborne, B.A.
Ball, Mary Iona.
Beattie, William Robt .
Baker, William Thomas.
Bell, James Stewart.
Brigham, Olivetta F.
Brown, Geo. Allen.
Beddie, Beatrice.
Bauer, Bernhardine Margaret.
Corkery, Florence.
Clarke, Jean Cameron.
Cantelon, John Wilfrid, M.A.
Clark, Mary Isabella.
Campbell, John E.
Doyle, Cora Catharine.
Davidson, D'Arcy M.
Dickson, Althea.
Duncanson, Mary Jean.
Doan, Arthur Wallace Ross.
Dunlop, William James.
Davy, Robt. Nelson, B.A.
Disher, Elizabeth B.
Eadie, William McLans.
Elder, Christiana Hosie, M.A.
Everson, Evelyn M.
Everts, Howard A.
Elliott, Marguerite.
Garner, John Henry.
Graham, Dougald.
Greer, Vanamber Kenneth.
Hallett, Mildred.
Hind, Edith J.
Hammond, John Edgar.
Hare, Arthur F.
Hartley, John.
Hunt, Alice M.
Hiscott, Edna Margaret.
Hamilton, Stella N.
Howson, Lexa.
Hull, Bessie Ross.
Johnston, Agnes J.
King, Elizabeth Giffard, B.A.
Kingston, Margaret Clare.
Keenan, Edward John.
Lee, Annie Marion.
LeTouzel, Constance E.
Lynch, Mary E.
Millen, Florence Edith.
McPherson, James L.
MacKay, John Malcolm, B.A.
McCutcheon, John M., B.A.
Mitchell, May.
Moffatt, Thomas Edward.
Morris, Arthur Whitman, B.A. (Honours).
Morrison, Edward, B.A. (Honours).
Mott, Stella.
Moorehouse, Walter.
McKeracher, Florence Jennie.
Mackenzie, Jessie J.
McSweeney, Mary T.
MacLennan, Helen.
McCallum, Jennie White.
Nichol, Charles O., B.A.
Noble, William Wesley.
Peregrine, May.
Purser, Florence Ethel.
Potter, Chas.
Reid, E. Lilly.
Robinson, Berta.
Runians, Minnie.
Senn, Jennie McKenzie.
Smith, James H., B.A.
Simpson, Fanny M.
Spankie, Amy I.
Stenhouse, Rebecca.
Stewart, Edith M.
Sloane, Sarah A. C.
Strachan, Helen May.
Sheppard, Alton Melancthon.
Tapscott, Harry Byron, M.A.
Taylor, Minnie.
Voaden, Frederick James.
Wallace, Donalda.
Webster, Mary A. R.
Williams, Edwin Stoddart.
Wallis, Wm.
Weese, Willimetta, B.A.
White, Harry S.
Wilson, Elizabeth A. R. V. (Honours).
Weir, Abbie P.
Webb, Daisy Mildred.
Young, Bessie Liddell.
Younger, Marion K.
Zavitz, Arthur S.

6. Second Class Certificates.

Adams, Letitia (Honours).
Aitken, Jennie.
Allison, Minnie Letitia (Honours).
Amoss, Cora Mildred.
Anderson, Lizze Edna.
Anderson, Maude Hannah.
Argue, Christopher (Honours).
Arnott, Ida Elizabeth (Honours).
Aylward, Alma Marion.
Allan, Jessie E.
Argue, Lynn Georgina.
Armstrong, Ethel M.
Alderson, Bertha.
Allen Lenora M.
Allingham, Eva Maude.
Andrew, Bessie A.
Andrews, Mary S. M.
Benoit, Muriel Agnes.
Ball, Mary Maud.
Beaven, Fanny Estella.
Black, Alice Marguerite.
Blatchford, Lillian Irene.
Bonham, Hessie E.
Book, Lillie Agnes.
Broley, Florence C. F.
Brown, Edna Lois.
Buchan, Florence Mae.
Buchner, Margaret Louise.
Bolton, Estella.
Brissette, Anastasia.
Barthel, John F.
Beckett, Nellie.
Bergey, Joshua E.
Birch, Olive.
Brown, Laura A.
Buckle, Mary.
Brown, Margaret.
Brennan, Eleanor.
Burke, Katie.
Campbell, Anna Belle.
Campbell, Irene Kate.
Campbell, Lucy Pearle.
Camplin, Eva Pearl.
Case, Zoe M.
Clarke, Nellie A. (Honours).
Copeland, Geo. E.
Creighton, Phoebe May.
Carpenter, Alma
Casselman, Ida B. (Honours).
Cassidy, Annie Theresa.
Caldwell, Margaret.
Chidley, Clara.
Campbell, Lily.
Dargavel, Jean K.
Davidson, Marie Louise.
Devereaux, Opal Windfield.
Dils, Mary Ethel.
Douglass, Agnes Gray.
Downing, Hattie May (Honours).
Dunkin, Mabel Melissa.
Daly, Annie E.
Daubney, Clara (Honours).
Davidson, Dora E.
Dalton, Hanna.
Dawe, Clara A.
Dunn, Annie S. A.
Eisler, Edith Lorena Jane (Honours).
Eveleigh, Ethel Isabell.
Edgar, Viola.
Eagan, Maude.
Elliott, Adrienne S. (Honours).
Ewing, Jemima.
Flint, Belsey Mary Margaret (Honours).
Foster, Grace Elizabeth (Honours).
Fowlie, Madge L.
Frawley, Annie.
French ,Gertrude.
Fair, Ada M.
Fair, Wilmah.
Fraser, Annie.
Fulton, Mary S.
Fennell, Mary E.
Flett, Chester M.
Folinsbee, Muriel Stevenson (Honours).
French, Florence Lenore (Honours).
Fraser, Christine.
Gamble, Effie Viola (Honours).
Gardiner, Gertrude.
Gamble, Mary L.
Gordon, Margaret.
Groomes, William S.
Giff, Florence E.
Gosnell, Teena M.
Grant, Jessie M.
Gunning, Annie.
Handley, Viola Gertrude.
Harris, Lavinia.
Hart, Katharine.
Harvey, Jennie.
Henderson, Helena Isabel.
Henderson, Margaret Jane.
Henry, Helena.
Hinman, Susie Adelia.
Holdcroft, Laura Gordon.
Holmes, Ethel.
Hooey, Phemia Graham (Honours).
Hunter, Jean Alexandria.
Haig, Margaret L.
Hall, E. Baylie.
Hunt, Louise E.
Hepburn, Agnes M.
Hollywood, Edith I.
Iveson, Sadie E.
Irwin, Ethel May.
Jarvis, Edna Alma.
Junkin, Edna Pearl.
Jackson, Edith.
Jordan, Carrie.
Johnson, Elvie.
Kennedy, Blanche Alice Louise (Honours).
Kimber, May Agnes.
Keays, Jessie (Honours).
Kenneally, Margaret E.
Kennedy, Elma.
Knapp, Jennie.
Kyle, Ellen.
Kenny, Mary A.
Kerr, Flora.
Kilpatrick, Nina (Honours).
Kennedy, Mary Teresa.
Lloyd, Ethel.
Lloyd, Helen.

6. Second Class Certificates.—*Continued*

Lackey, Alice.
Lang, Julyan.
Laturney, Gertrude.
Leeson, Ella M.
Leighton, Lillian Edith.
Ludlam, Edna Pearl.
Lundy, Esma E.
Leaver, Sarah.
Leeson, Mildred.
LeHane, Hannah.
Langdon, Ralph.
Leak, Nellie.
Lewis, Lissa.
Lordan, Annie.
McGregor, Daisy.
Millar, Maggie.
Mullen, Mamie C.
Marsh, Cora Belle.
Martin, Constance Devereaux (Honours).
Merkley, Mary Ann.
Merrill, Edna May.
Miller, Emmaretta.
Moffatt, Winnifred.
Moore, Edna.
Murray, Nellie.
MacDougall, Grace.
Mackenzie, Effie May.
Mackenzie, Florence M.
McBride, Ida Ruth.
McCalla, Edith Maria.
McClure, Annie.
McCoy, Maude.
McEwen, Elizabeth.
McGill, Kathleen Worthington.
McGugan, Amy S.
McKay, Margaret Ethel.
McKenzie, Ethel Malory (Honours).
McNaughton, Agnes.
Morrison, Fannie Selena (Honours).
MacDermid, Margaret (Honours).
McEwen, Amelia.
McCrea, Nora.
McLennan, Lizzie.
McMillan, Stella.
McNair, Elizabeth.
Macdonald, Bella.
Munro, Annie.
Murphy, Lizzie.
McClocklin, Mary L.
McCall, Bella.
McCracken, Rebecca E. (Honours).
McDowell, Florence L.
Maceachren, Ethel.
MacEwan, Edith E. T.
McFadyen, Hugh A.
MacKay, Kate.
Mackenzie, Annie J.
McLenhan, Jessie M.
McLennan, Maggie M.
MacLeod, Flora.
Mearns, Margaret.
Michael, Mary L.
Moody, Phoebe A.
Murray, Annie B.
Macklin, Maggie.
Miller, Opal.
Nicklin, Daisy F. A. (Honours).
Nunnick, Clara Electa (Honours).
Nicol, Mary.
Overend, Jean Viola.
O'Keeffe, Katharine.
Osborne, Ethel.
O'Connor, Biliana Ruth.
Oliver, Jessie R.
O'Brien, Gertrude.
O'Mahoney, Bertha.
Pomeroy, Gertrude.
Park, William.
Paterson, Jean.
Pengelly, Mabel (Honours).
Pollock, Cassie.
Purser, Stella Irene.
Parker, Mary.
Prichard, Leila V.
Prichard, Myrtle E.
Quarry, Margaret.
Rae, Eathel S. (Honours).
Rhynd, Bessie Edie.
Richards, Ada Catherine.
Richmond, Annie Dickie (Honours).
Rife, Elizabeth Mary.
Robbins, Walter W.
Robins, Lilian Elizabeth Rose.
Rolls, Hattie A.
Rielly, Bernard.
Ross Georgina (Honours).
Rae, Jessie R.
Ramsey, Isabelle.
Ratcliffe, Mabel C. (Honours).
Reinhart, Joseph F.
Richards, Lyda.
Rock, Ida Estelle.
Ryerse, Ida J.
Redmond, Annie Loretto.
Stanley, Edna (Honours).
Saulter, Susie Robena (Honours).
Scott, Laura L.
Scott, Mary Elizabeth.
Scriven, Lulu Emily.
Sergison, Annie.
Short, Louise.
Simpson, Violet V. (Honours).
Sinclair, Isabel MacDonald (Honours).
Sinclair, Lyla Mabel.
Smith, Evelyn Grace.
Smith, George Albert.
Smith, Minnie Myrtle.
Snell, Florence Mary.
Snell, Luella Elizabeth.
Speedie, Alice (Honours).
Stalker, Nita Susannah (Honours).
Stapleton, Jessie Blanche.
Stephenson, Ernest H.
Stewart, Adela Jessie.
Stewart, Margaret Elizabeth (Honours).
Sutton, Margaret Elizabeth.
Scott, Laura M.
Shannon, Margaret (Honours).
Sinclair, Lillian (Honours).
Smith, Otto J. (Honours).
Smith, Stanley D. (Honours).
Smyth, Winnifred Rebecca.

6. Second Class Certificates.—*Concluded.*

Spence, Lillie C.
Stanley, Etta E.
Steele, Maud M.
Steinhoff, Ethel (Honours).
Seeber, Estelle.
Taylor, Christine Margaret.
Terry, Emma Lilian.
Thomlinson, Esme May.
Tyson, Susan Louisa (Honours).
Timberlake, F. Balfour.
Telfer, Carrie.
Thomson, Elizabeth.
Thornton, Katherine H.
Tiffin, Edna.
Troy, Mary.
Troy, Nellie.
Van Valkenburg, Jennie.
Van Newbrown, Anna.
Walker, Ethel Margaret.
Walker, Pearl Isabella.
Wallace, Lena F. (Honours)
Ward, Florence Maude.
Webster, Jessie Anne.
West, Ethel Frances.
Whetham, Henrietta Mabel.
Williams, Hattie May.
White, Etta May.
Wiltse, Jennie M.
Wickmore, A. Eleanor (Honours).
Williams, Edith M.
Williams, Margaret E.
Walrond, Augusta.
Ward, Marion Barclay.
Watson, Lizzie.
Walters, Bessie Mae.
Wigelsworth, Edith J.
Wiggins, Hattie Louise.
Wilson, Charlotte E.
Wiseman, Jessie A.
Wrong, Ada M. C.
Yule, Gladys.
Zimmer, Mabel.

7. Kindergarten Directors.

Ault, Edna C. M. (Honours).
Day, May.
Dickson, Grace (Honours).
Doxsee, Mrs. Lenore (Honours).
Easton, Molly.
Ellis, Muriel.
Ferris, Bartie.
Greenlees, Elva (Honours).
Henderson, Lilias (Honours).
Houlding, Naomi.
James, Hulda G.
Knapp, Rachel Stella.
Lawson, Floy.
Leavens, Helen.
MacCrae, Edith.
Orme, Emily (Honours).
Robb, Annie M. (Honours).
Ross, Elsie M.
Rowntree, Grace.
Seaman, Annie L. (Honours).
Stripp, Erie E.
Switzer, Lizzie M.
Walker, Lily.
Williams, Margaret H. (Honours).

8. Certificates in Household Science.

Bawden, Susie.
Craig, Mary Alice.
Drayton, Saidie De Vere.
Fear, Luella E. J.
MacBrien, Isabella.
Matthews, Alice Maud Mary.
Moule, Mabel Carfrae.
Neville, Allene Beatrice.
Patterson, Olive Gair.
Proctor, Margaret Adda.
Scott, Lucy Louisa.
Ward, Essie Rowena.

9. Certificates in Manual Training.

Houston, Daniel Wesley (Specialist).
Yeo, Charles Timothy.

10. Permanent Third Class and Public School Temporary Certificates.

County.	Permanent Third Class Certificates.		Temporary Certificates.
	Provincial.	Limited to the County	
Brant			1
Bruce	1		19
Carleton			11
Dundas			2
Essex			22
Frontenac	3	4	1
Glengarry			13
Grey			7
Halton			1
Hastings		1	57
Huron			1
Kent			12
Lambton			6
Lanark	1		19
Leeds	8		10
Lennox and Addington	2	1	31
Lincoln			4
Middlesex			1
Norfolk			13
Ontario			12
Peterborough			5
Prescott and Russell			19
Prince Edward			11
Renfrew	1	2	27
Simcoe	3		17
Stormont	1		4
Victoria	1	1	27
Welland	1		2
Wellington	1		7
Wentworth			1
York			2
Central Ontario R. C. S. Schools	2	3	28
Eastern Ontario R. C. S. Schools	12	3	9
Western Ontario R. C. S. Schools			4
Bilingual R. C. S. Schools	1	1	16
Districts	2	3	239
Total, 1906	40	19	661
" 1905	41	17	451
Increase		2	210
Decrease	1		

11. Professional Examinations.

Examinations.	Number of Candidates.	Certificates awarded.					
		First Class.	Second Class.	High School Interim.	Public School Interim	Kindergarten Directors.	Kindergarten Assistants.
Normal College	218	44		133	149		
Normal School	312		282		28		
Kindergarten	*					24	25

* Not reported.

APPENDIX U.—MEMBERS OF THE ADVISORY COUNCIL, AND BOARDS OF EXAMINERS; LISTS OF ASSOCIATE EXAMINERS, AND HIGH SCHOOL PRINCIPALS AND ASSISTANTS.

I. List of Members of the Advisory Council of Education, 1906-1907.

Maurice Hutton, M.A., LL.D., President *pro tempore* of the University of Toronto, Toronto (Chairman).
John Seath, LL.D., Superintendent of Education for Ontario, Toronto.
Rev. N. Burwash, LL.D., President, Victoria College, Toronto.
Rev. T. C. S. Macklem, Provost, Trinity College, Toronto.
D. R. Keys, M.A., University College, Toronto.
A. P. Knight, M.A., M.D., Queen's University, Kingston.
Rev. J. H. Farmer, B.A., LL.D., McMaster University, Toronto.
Rev. W. J. Murphy, Rector, Ottawa University, Ottawa.
N. C. James, Ph. D., Provost, Western University, London.
Thomas A. Kirkconnell, B.A., Principal, High School, Port Hope.
Stephen Martin, B.A., Principal, Collegiate Institute, St. Mary's.
Harriette Johnston, Public School Teacher, Toronto.
Alexander Austin Jordan, Principal, Model School, Port Hope.
J. W. Plewes, Principal, Model School, Chatham.
Thos. Agnew Reid, Principal, Model School, Owen Sound.
John J. Rogers, Principal, Separate School, Lindsay.
William Isaac Chisholm, M.A., Inspector of Public Schools, Kincardine.
Rev. W. H. G. Colles, Inspector of Public Schools, Chatham.
J. Ball Dow, School Trustee, Whitby.
John H. Laughton, School Trustee, Parkhill.

II. Boards of Examiners, 1907.

1. *Junior and Senior Teachers' and University Matriculation Board.*

A. R. Bain, M.A., LL.D., Victoria College, Toronto.
W. S. W. McLay, M.A., McMaster University, Toronto.
M. W. Wallace, Ph. D., University College, Toronto.
W. H. Ballard, M.A., Public School Inspector, Hamilton.
J. Matheson, M.A., Queen's University, Kingston.
W. Prendergast, B.A., Separate School Inspector, Toronto.
C. A. Chant, M.A., Ph. D., University of Toronto, Toronto.
F. B. Kenrick, M.A., Ph. D., University of Toronto, Toronto.
W. H. Piersol, B.A., M.B., University of Toronto, Toronto.
J. W. G. Andras, Ph. D., Trinity College, Toronto.
P. Edgar, Ph. D., Victoria College, Toronto.
J. Squair, B.A., University College, Toronto.
W. H. Alexander, Ph. D., Western University, London.
G. W. Johnston, B.A., Ph. D., University of Toronto, Toronto.
J. Mcnaughton, M.A., Queen's University, Kingston.

2. *District Certificate Board.*

N. W. Campbell, I. P. S., Durham.
J. E. Tom, I. P. S., Goderich.
Isaac Day, B.A., I. P. S., Orillia.
J. B. McDougall, B.A., I. P. S., North Bay.

3. *High School Entrance Board.*

D. M. Walker, B.A., I. P. S., Peterborough.
D. D. Moshier, B.A., B. Pæd., I. P. S., Sarnia.
S. J. Radcliffe, B.A., Principal Collegiate Institute, London.

III. Associate Examiners for Departmental Examinations, 1906.

1. *District Certificate Examination.*

Dictation:
Kerfoot, H. W.

Composition:
Lewis, T. N.

Geometry:
Leighton, R. H.

Grammar:
Magee, J. A.

Algebra:
Murray, R. W.

Geography:
Miller, G. A.

Arithmetic:
Froats, J.

Literature:
Robinson, John B.
Dunsmore, T.

History:
Keys, S. J.

2. *Junior Teachers' and Junior Matriculation.*

Geography:
Mills, G. K.
Emery, J. W.
Cornish, G. A.
Stevenson, L.
Kennedy, Geo. E.
McLean, E. M.
Cole, J. M.
Might, L.
Shepherd, Martin W.
Saunders, W. J.
Elliott, Thos. W.

Physics:
Gavin, F. P.
Smeaton, W.
Voaden, J.
Moore, J. R.
Brunt, Robt. A.
Arthur, C. C.
Grainger, H. A.
Sanders, Charlotte.
Madill, A. J.
Ewing, W. C.
Conn, H.
Langford, T. E.
Hamilton, Robt. S.
Pugsley, E.

Chemistry:
Gundry, A. P.
Closs, Frank D.
Wilson, W. J.
Corkill, E. J.
Preston, T.
Smith, T. C.
McKay, D. A.
DeLury, Ralph E.
Bigg, E. M.
Cohoe, W. P.
MacMurchy, Norman.
Lennox, Thos. H.

Literature:
Stevenson, A.
Race, W. B.
Jeffries, John.
Bennett, A. Maud.

Literature:
Fleming, Ethel May.
Macdonald, James.
Tennant, Isabella L.
Conlin, Evelyn E.
Jennings, E. W.
Mowat, A.
Dickson, J. E.
Reid, Robt.
Milburn, E. F.
Reed, Geo. H.
Patterson, D. S.
Kemp, W.
Macpherson, Frederick F.
Henry, Edith M .
Coombs, A. E.

Composition:
Redditt, Thos. H.
Bale, Geo. S.
French, F. W.
Dolan, Geo. R.
Horton, Chas. W.
Somerville, T. C.
Sealey, Ethel May.
Stevenson, Orlando John.
Nesbit, David A.
Guillett, Cephas.
Archer, Mary A.

History:
Burt, Arthur W.
Freeman, J. A.
Barron, Robt. A.
Dunkley, A. W.
Dolan, John H.
McKinnon, C.
Dowsley, W. C.
Jermyn, P. T.
Maybee, Geo. E.
Dickenson, E. U.
Patterson, Andrew.
Grant, David M.
Sait, E. M.
Anderson, F. C.
Kent, Eleanor.
Barnes, Chas. L.
Findlay, W. A.

3. *Senior Teachers' and Honour Matriculation.*

Grammar:
Jamieson, J. S.
Asselstine, R. W.
McCuaig, H. M.
Malcolm, Geo.
Pattee, Mrs. Ada.
McQueen, J.
Watson, A. H.
Kennedy, L. A.
Newman, Geo. E.
McRae, Donella Maud.
Morgan, Sidney A.
McManus, Emily.
Howard, Edwy S.
Story, Selina G.

Algebra:
Gourlay, Richard.
Keith, G. W.
Patterson, W. J.
Lick, Addie.
Coates, Daniel H.
Rutherford, W. H
Findlay, W.
Crawford, J. T.
Hogarth, G.
Auld, Chas.
Kennedy, T.
Brown, C. L.

Geometry:
Henry, Thos. M.
Graham, R. G.
Taylor, J. G.
Hills, Minnie.
Armstrong, F. G.
Saunders, R. W.
Jamieson, Thos.
Galbraith, R.
Montizambert, J. R.
Fairchild, A. H.
Hobbs, Thos.
Andrews, David.
Gray, Robt. A.
White, E. T.
Cameron, J. S.

Geometry:
Dickson, J. D.
Richardson, Kate.
Cranston, David L.

Arithmetic:
Potter, Chas.
Seaton, E. T.
Courtice, S. J.
Wren, J. S.
Davidson, John H.
Doidge, T. C.
Norriss, James.
Shaw, R.
Kelley, H. H.
Houston, John A.
Girdwood, A. P.

Classics:
Mayberry, Chas.
Bell, John J.
Teskey, Edith A.
Wright, W. J.
Bryan, Hugh W.
McKinley, J. M.
Kerr, Chas. S.
Messmore, J. F.
Coutts, R. D.
Munro, P. F.
Tremeer, J.
Anderson, W. G.
Gundy, H. M.
Andrews, R. T.
Morrow, J. D.
Brethour, J. H.
Macdonald, J. F.

French and German:
Day, A. E.
Cook, Margaret.
Burnham, A. M.
Trenaman, Mabel N.
Tamblyn, W. F.
Galbraith, W.
Grant, Christine C.
Fleming, Ethel Catherine.
Watterworth, Grace McC.
Houston, Jessie.

3. *Senior Teachers' and Honour Matriculation*

French and German:
Dales, J. N.
Hogarth, E. S.
Ferguson, W. C.
McKellar, H. S.

Classics:
Smith, Lyman C.
Passmore, Samuel F.
Little, Robt. A.
Glassey, David A.
Colling, James.
Hardie, W.

Mathematics:
DeGuerre, Ambrose.
Cornwell, J. L.
Little, James G.
Robertson, Hugh S.

Mathematics:
Elliott, John.
Govenlock, W. M.

Science:
Hill, Ethelbert L.
Ellis, William S.
Smith, R. Wilson.
Forrest, William.

English:
Foucar, W. K.
Houston, J.
Lawlor, Gertrude.
Perry, Samuel W.
Radcliffe, Stephen J.

History:
Carscadden, Thos.
Hoag, J. P.

IV. List of Principals and Assistants of Collegiate Institutes and High Schools, January, 1907.

Collegiate Institutes.	Names of Teachers.	Degrees.	Specialists.	Date of appointment.	No. of years' experience in a High School or Collegiate Institute.	No. of years in a Public School.	Salary.		
							Principal.	Male Assistants.	Female Assistants.
Aylmer	Rutherford, Walter W	B.A., Tor	Math	1883	33	1	1,500	.....	.....
	Kilmer, Ernest E. C	B.A., Queen's	Commercial Sci	1899	17	3	.....	1,100	.....
	Story, Selina Gladys	M.A., Queen's	Mods. and Hist	1904	4	....	.....	.....	900
	Gundry, Helen Myrtle	B.A., Tor	Class	1906	3	1	.....	.....	750
Barrie	Redditt, Thomas H	B.A., Tor	Eng., Fr., Ger	1892	24	....	1,600	.....	.....
	Hay, Andrew		Math	1882	27	8	.....	1,100	.....
	Morrison, A. Selkirk	B.A., Queen's	Eng. Hist	1905	3	4	.....	1,000	.....
	Mackay, Donald Alex	B.A., Queen's	Sci	1905	5	5	.....	1,000	.....
	White, Kate E.....(Interim)			1907	2	2	.....	.....	800
Berlin	Forsyth, David	B.A., Tor	Math	1901	30⅔	1	1,750	.....	.....
	Jackman, David S	M.A., Tor	Sci	1902	5½	....	.....	1,200	.....
	Dolan, George Robert	B.A., Queen's	Eng., Hist., Class	1903	5½	....	.....	1,200	.....
	Norman, Lambert	B.A., Tor	Com., Eng., Hist., Fr., Ger	1904	12	3	.....	1,200	.....
	Martyn, Harold J	B.A., Tor	Mods. and Hist	1904	4½	3	.....	1,050	.....
	Williams, Walter Herbert	M.A., Queen's	Mods. and Hist	1905	2½	....	.....	1,000	.....
	Brown, Harry Wilson (Interim)			1905	1½	17	.....	900	.....
	Houston, Daniel Wesley		(Manual Training Instr.)	1903	3½	18	.....	1,200	.....
	Fisher, Katharine A		(Household Science Instr.)	1903	3½	....	.....	.....	750
	Zoellner, M. Margaret		(Physical Director)	1905	1½	....	.....	.....	400
Brantford	Burt, Arthur William	B.A., Tor	Mods. and Eng.	1893	28	....	1,800	.....	.....
	Passmore, Samuel Francis	M.A., Tor	Class	1885	27	....	.....	1,250	.....
	Coates, Daniel Harsum	B.A., Tor	Math	1893	19	....	.....	1,250	.....
	Bunnell, Effie Maria	B.A., Tor	Eng., Fr., Ger	1891	15	....	.....	.....	1,250
	Shultis, Adam		Commercial	1896	11	11	.....	1,250	.....
	Saunders, William John	M.A., Queen's	Sci	1907	6½	3	.....	1,100	.....
	Gibson, Ethel.....(Interim)	B.A., Tor	Mods. and Hist	1905	2	....	.....	.....	800
	Dingman, Anna Pamelia (Int'm)			1905	4	2½	.....	.....	600

	Errett, Charles F.		(Manual Training Instr.)	1903				1,200	
	Raynor, Constance		(Household Science Instr.)	1904					600
Brockville	Mowat, Alexander	B. A., Tor.	Eng., Hist	1901	15	3	1,600		
	Bryan, Hugh Wallace	M. A., Queen's	Class	1901	9½			1,150	
	Husband, Almeron Judson	B. A., Tor.	Eng., Hist. (Inter), Fr., Ger.	1895	11	3		1,150	
	Forbes, John William	B. A., Tor.	Math	1902	10	3		1,150	
	Emery, John Whitehall	B. A., Tor.	Commercial (Interim) Sci.	1904	9½	3½		1,150	
	Hopkings, Walter E. (Interim)			1904	3	4		800	
	Giles, A. Edith			1890	17				800
	Richardson, Kate		Commercial	1898	10	6			800
Chatham	Twohey, William James	M. A., Tor.	Class	1904	22		1,650		
	Paterson, David Smith	B. A., Tor.	Eng., Fr., Ger.	1888	30	1½		1,250	
	Taylor, Wilson	B. A., Tor.	Math,	1894	21	2½		1,250	
	Lane, James Stanley	B. A., Tor.	Fr., Ger.	1898	10			1,200	
	Collins, Henry		Commercial	1902	7	5		1,250	
	Jennings, Edwin William	B. A., Tor.	Eng. Hist., (Interim)	1904	4	4		1,000	
	Lafferty, Isabella Sarah Euph	B. A., Tor.		1903	3½	3½			600
	Ayers, Marion Huntley (Int'm)	M. A., Queen's	Sci	1905	2½	8			1,200
	Wethey, Edmund James (Int.)	B. A., Trin.	Math	1906	1½	5½		800	
	Kidd, Truman W. (Interim)			1906	1½	6		900	
Clinton	Gundry, Arthur Presland	B. A., Tor.	Sci	1906	15		1,400		
	McKinnon, Charles (Interim)	B. A., Tor.	Class	1904	5	3		1,000	
	Delmage, Edith Rachel	B. A., McMaster	Math	1906	2	4			800
	Clayton, Adelaide Helena	B. A., Tor.	Fr., Ger., Eng.	1906	14				1,000
	Watterworth, Grace McC.		Commercial	1905	6	2			700
Cobourg	Colling, James	B. A., Tor.	Class	1906	15	3	1,400		
	Arthur, Colin Clayton	M. A., Queen's	Sci	1893	15	1		1,050	
	Odell, John William	B. A., Tor.	Math	1895	15	3		1,050	
	Jones, Laura Lucinda	B. A., Tor.	Eng., Fr., Ger.	1898	13				900
	Edward, Wesley Grafton (Int.)		Com	1906	1½	1		1000	
Collingwood	Hammill, George	B. A., Tor.	Math	1892	15		1,200		
	Brown, Percy William	B. A., Queen's	Sci	1906	12	4		1,000	
	Henderson, James Vanwyck	B. A., Tor.	Class	1906	3½	3		1,000	
	Jones, Louis E.	B. A., Tor		1906	4			900	
	Cole, Agatha St. Osyth	B. A., Tor.	Mods. and Hist.	1905	2½	2½			800
	Stone Alice B.		Commercial	1903	4½	7			800
Galt	Carscadden, Thomas	M. A., Tor.	Eng., Hist.	1885	33	3	1,800		
	DeGuerre, Ambrose	B. A., Tor.	Math	1890	24	2		1,300	
	Evans, William Edwin		Commercial	1892	17	1		1,300	
	Hamilton, Robert Somerville	B. A., Tor.	Sci	1894	17			1,300	

IV.—List of Principals and Assistants of Collegiate Institutes and High Schools, January, 1907.—*Continued.*

Collegiate Institutes.	Names of Teachers.	Degrees.	Specialists.	Date of appointment.	Number of years' experience in a High School or Collegiate Institute.	Number of years in a Public School.	Salary. Principal.	Male Assistants.	Lady Assistants.
Galt—*Continued.*	Carter, Janet Wishart	M. A., Tor	Eng., Hist., (Inter.), Fr., Ger.	1901	14	....	.....	.....	1,050
	Morrow, Archibald Elston	B. A., Tor.	Class	1905	17	....	.....	1,300	.....
	Bissonnette, Thos. Hume (Int.)	.....	.....	1906	.....	....	.....	800	.....
Goderich	Field, John Marden	B.A., Tor.	Eng., Hist., Fr., Ger.	1900	11	7½	1,300	.....	.....
	Strang, Hugh Innis	B.A., Tor.	Class	1871	39	3	.....	1,100	.....
	Myer, Albert Nicholas	M.A., Trin	Math.	1906	12	..	.....	1,050	.....
	Robertson, George A	B.A., Tor.	Sci. (Interim)	1905	2½	5	.....	1,050	.....
	Parlee, Edith	.....	Commercial	1903	11⅔	10	.....	.....	875
	Fessenden, Muriel...(Interim)	M.A., Tor	.....	1907	.....	1½	.....	.....	650
Guelph	Davison, James	B.A., Vic	Math.	1892	33	2	1,600	.....	.....
	Hill, Ethelbert Lincoln	B.A., Tor.	Sci.	1888	17	1	.....	1,200	.....
	Skinner, Kate Clara	B.A., Tor.	Eng., Hist., Fr., Ger.	1895	12	1	.....	.....	950
	Kirkwood, Florence Ethel	B.A., Tor.	Class	1907	7½	....	.....	.....	1,200
	Charlesworth, John William	.....	.....	1888	19	2½	.....	1,050	.....
	Taylor, Luther William	.....	Commercial	1902	6	1½	.....	1,100	.....
	Hughes, Francis Joseph	.....	Commercial	1904	2½	....	.....	900	.....
	Overholt, B. Percy...(Interim)	.....	.....	1907	....	4	.....	850	.....
Hamilton	Thompson, Robert Allan	B.A., Tor.	Math.	1886	21	....	2,000	.....	.....
	Turner, John Burgess	B.A., Queen's	Math., Science	1885	24	3½	.....	1,800	.....
	Crawford, John Thomas	B.A., Tor.	Math.	1889	19	....	.....	1,600	.....
	Logan, Wm. McGregor	M.A., Tor	Class	1892	21	....	.....	1,600	.....
	Hogarth, Eber Septimus	B.A., Tor	Eng., Fr., Ger.	1892	18	....	.....	1,600	.....
	MacPherson, Fred Fotheringham	B.A., Tor.	Eng., Fr., Ger.	1894	14	2	.....	1,600	.....
	Paterson, Andrew	M.A., Trin.	.....	1874	31	4	.....	1,400	.....
	Gill, James	B.A., B. Paed., Tor.	Math.	1892	17	2	.....	1,400	.....

	Morgan, Sydney Albert	B.A., B. Pæd. Tor.	Class	1891	16	2		1,400	
	Simpson, Benjamin L. (Interim)	M.A., Queen's	Math	1905	1½	3		1,100	
	Johnston, George Lang	B.A., Queen's	Commercial	1888	18	3		1,100	
	McGarvin, Mich'el Jas. (Interim)	B.A., Tor	Mods. and Hist	1906	1½	2		1,000	
	Morris, Arthur Whitman (Int'm)	M.A., Tor	Class	1906	2	4		1,000	
	Armstrong, George Francis	B.A., Tor	Math	1907	4½	1½		1,100	
	Malcolm, Wyatt	M.A., Queen's		1907	4	6		1,000	
	Taylor, Mabel Annie	B.A. Queen's		1904	3	5			650
	Kraft, Ernestine Lizette			1904	2	2			600
	Davidson, Margaret Cheyne			1876	31	14			500
	Macpherson, Mary Constance	B.A., Queen's	(Household Science Instr.)	1902	4	4			800
	*Bailey, William		(Manual Training Instructor)	1903				1,100	
	Syme, John James		(Drill Instructor)	1905					
Ingersoll	Briden, William	B.A., Queen's	Class, Eng	1886	26½	½	1,400		
	Macdonald, George Leslie	B.A., Tor	Eng., Fr., Ger	1895	12	7		1,100	
	Patterson, Richard Allan	B.A., Tor	Math	1906	13½	3½		1,100	
	Pearson, Alexander	B.A., Tor	Sci	1905	13½			1,100	
	Lucas, Gavin Allan	B.A., Tor	Commercial (Interim)	1904	3½	6		950	
	Hatch, Salem B		Commercial (Interim)	1904	5	6		950	
Kingston	Ellis, William Stewart	B.A., B. Sc. Vic	Math, Sci	1893	26	2	1,900		
	Sliter, Ernest Oscar	M.A., Tor	Class	1888	19			1,300	
	Sills, William Ryerson	M.A., Queen's	Math	1897	15	3		1,300	
	Kemp, William	M.A., Queen's	Mods. and Hist	1905	6½	1		1,050	
	Staples, Louis Edgar	M.A., Queen's	Sci	1902	4½	15		950	
	Elliott, Thomas W. (Interim)	B.A., Tor	Sci	1906	1	11		800	
	Ramsay, James Alex		Com. (Interim)	1906	3½	6		1,000	
	Fraser, James Williams	B.A., Tor		1904	3½	10		950	
	Bale, George Sydney	B.A., Tor	Eng., Hist., Fr., Ger	1906	6			1,100	
	Carter, Eslie	B.A., Tor		1906	7½			900	
	Henstridge, Elizabeth	M.A., Queen's	Eng., Hist., Fr, Ger	1907	5½	7			800
	Chown, Hattie Louise			1905	2	20			800
	Hatch, Augustus F	B.A., Bowdoin	(Manual Training Instructor	1903	8			1,100	
Lindsay	Hartstone, John C	B.A., Tor	Math	1886	25		1,600		
	Cornish, George Augustus	B.A., Tor	Sci	1903	5	3½		1,250	
	Rosevear, Howard Stanley	B.A., Tor., M.A., Har.	Com. (Interim), Sci	1903	11			1,250	
	Macdonald, John Ford	M.A., Queen's	Class	1907	5½			1,200	
	Walks, Robert Hilton	B.A., Tor	Eng., Hist	1904	10	6		1,200	
	Willson, Alice M	B.A., Tor	Fr., Ger	1904	3½	4			1,050
London	Radcliffe, Samuel John	B.A., Tor	Eng., Fr., Ger.	1891	18	2½	2,200		
	Little, Robert A	B.A., Tor	Class	1886	22½			1,600	
	Ferguson, William Chalmers	B.A., Tor	Eng. Fr., Ger	1892	18½			1,500	

* Part time teacher.

IV.—List of Principals and Assistants of Collegiate Institutes and High Schools, January, 1907.—*Continued.*

Collegiate Institutes.	Names of Teachers.	Degrees.	Specialists.	Date of appointment.	Number of years' experience in a High School or Collegiate Institute.	Number of years in a Public School.	Salary. Principal.	Male Assistants.	Lady Assistants.
London —*Con.*	Govenlock, William M	B.A., Tor	Math	1898	14		....	1,400	.....
	McVicar, Archibald	B.A., Tor	Eng., Hist	1903	9½	4½	.....	1,400	.....
	Stuart, Frederick Alfred	M.A., Tor	Sci	1903	12	....	.....	1,400	.....
	McCutcheon, Fred. Wm. Caswell	B.A., Tor	Fr., Ger., (Int.), Math., Eng Hist	1900	9½	....	.....	1,325	.....
	Dickenson, James Arthur		Commercial	1895	20	4	.....	1,350	.....
	Andrus, Guy Ambrose			1888	12	7½	.....	1,300	.....
	Riddell, Frank P	B.A., Tor	Class	1898	17	....	.....	1,300	.....
	Mooney, Wm. H. Thos	B.A., Tor	Class (Interim)	1903	4½	6	.....	1,300	.....
	Gray, Neil Roy (Interim)	B.A., Tor	Mods. and Hist	1904	4½	3	.....	1,300	.....
	McLean, Goodwin Vallentyne	M.A., Tor. & Harvard	Math	1906	14	1½	.....	1,100	.....
	Grainger, Horace Alex	B.A., Tor	Sci	1906	....	....	.....	1,100	.....
	Jones, Samuel S			1892	16	6	.....	1,200	.....
	Downing, John Henry			1900	9	6	.....	1,200	.....
	Bailey, Joseph J			1906	....	....	.....	1,000	.....
	Kelso, Alice C			1897	11½	2½	.....	.....	900
	Anderson, Jessie I. (Interim)	B.A., Tor	Mods. and Hist.	1906	1	....	.....	.....	800
	Davidson, S. Kelso		(Art Instructor)	1887	26	....	.....	650	.....
	Gregory, William		(Drill Instructor)	1902	4½	....	.....	750	.....
	McIntosh, Christine		(Household Science Instr.)	1902	3	....	.....	.....	400
	*Pickles, Sugden		(Manual Training Instr.)	1906	....	....	.....	150	.....
Morrisburg	Jamieson, James Smyth	M.A., Vic	Eng.	1882	31	4	1,400	....	.....
	Massey, Arthur Wallace	B.A., Vic	Eng., Math	1892	16	....	.....	1,100	.....
	Cooke, John Alexander	M.A., Queen's	Class	1904	17½	3	.....	1,100	.....
	Amos, Flora Ross	B.A., Tor	Mods. and Hist	1906	2½	....	.....	.....	800
	Jamieson, Clinton Egerton		Com	1906	2½	1	.....	800	.....
Napanee	Flach, Ulysses Jacob	M.A., Tor	Math	1900	18	....	1,500	.....	.....

	Reid, Marvin Ryckman	M.A., Queen's	Sci.	1900	8	5½		1,100	
	Croskery, Robert Arthur	B.A., Queen's	Class.	1903	10			1,100	
	Collins, Herbert Eugene (Int'm)	B.A., Tor.	Mods. and Hist.	1907		½		1,000	
	Nicol, Margaret A.			1892	14½	5			600
	Smith, Margaret		Com. (Interim)	1892	15	5			600
Niagara Falls	Dickson, James D.	B.A., Tor.	Math.	1893	19	3	1,500		
	Walker, David McKenzie		Com.	1893	17	16		1,100	
	Will, George Edwin	B.A., Tor.	Class.	1901	7	3		1,100	
	Voaden, John	M.A., Queen's	Sci.	1903	10	4		1,100	
	Sealey, Ethel May	B.A., Tor.	Mods. and Hist.	1906	3½	2½			1,000
	Conlin, Evelyn Elizabeth	B.A., Tor.	Mods. and Hist.	1906	5				1,000
	Robertson, John Nelson	B.A., Tor.	Class. (Interim)	1906	2			900	
Orillia	Dickson, John Elder	B.A., Tor.	Class., Eng.	1899	26	1	1,500		
	Doidge, Thomas Clarke	B.A., Tor.	Math., Com.	1899	13	5		1,200	
	Madill, Alonzo James	B.A., McMaster	Sci.	1904	5	3½		900	
	Grant, Christina Cameron	B.A., Tor.	Mods. and Hist.	1903	4½	9			800
	Miller, Nannie M. A.		Com., Eng.	1905	13	1			850
	Ogilvie, Alvin J.			1906	2			700	
	Clark, Ira E. (Interim)			1906		8		650	
Ottawa	McDougall, Alexander Hiram	B.A., Tor.	Math.	1889	23		2,400		
	Macmillan, John	B.A., Tor.	Eng.	1864	42	5		1,800	
	Sykes, William John	B.A., Tor.	Eng., Fr., Ger.	1894	15	3		1,800	
	Campbell, Daniel Alexander	B.A., Tor.	Sci.	1896	10	3		1,775	
	Macty, Aletta Elsie	M.A., Queen's	Fr., Ger.	1903	12	3			1,500
	Norris, Isaac Taylor	B.A., Queen's	Math.	1898	11			1,500	
	Hardie, William	B.A., Tor.	Class.	1905	15			1,500	
	Stothers, Robert	B.A., Queen's		1887	20	8		1,600	
	Simpson, Robert S.		Com.	1903	8	9		1,200	
	Meiklejohn, Allan James	B.A., Queen's	Eng., Hist.	1906	8	3		1,300	
	Armstrong, W. Gilmochie	M.A., Tor.	Mods. and Hist.	1900	12	4		1,150	
	Ewing, William Campbell	M.A., Queen's	Sci.	1905	10	4		1,100	
	Hedley, James Walter	M.A., Tor.	Math.	1904	4	2		1,100	
	Smeaton, William	B.A., Tor.	Sci.	1906	6½	1½		1,100	
	Stevenson, Wm. John			1906	16	8		1,100	
	Tompkins, Elizabeth Augusta			1902	4½	19			900
	McManus, Emily	M.A., Queen's	Eng., His.	1906	11	3½			900
	Hood, Finlay		Com. (Interim)	1906	2	7		1,000	
	Corrigan, Eugene		(Manual Training Instr.)	1906	2	2		1,000	
	*Chitty, Louis M. (Sergt.-Major)		(Drill Instructor)	1904				350	
Owen Sound	Murray, Thomas	B.A., Tor.	Math.	1897	13		1800		
	Packham, James Henry	B.A., Vic.	Math., Commercial.	1884	23½	2		1,250	

* Part-time teacher.

IV.—List of Principals and Assistants of Collegiate Institutes and High Schools, January, 1907.—*Continued.*

Collegiate Institutes	Names of Teachers	Degrees.	Specialists.	Date of appointment.	No. of Years' Experience in a High School or Collegiate Institute.	No. of Years in a Public School.	Salary.		
							Principal.	Male Assistants.	Lady Assistants.
Owen Sound—*Con*	Whyte, David	B. A., Tor	Sci.	1902	7	5	.....	1,250	.....
	McKellar, Herbert S	B. A., Tor	Fr., Ger	1898	11½	.....	.....	1,250	.....
	Howard, Edwy. S	B. A., Vic	Eng., Hist	1902	14	3	.....	1,250	.....
	Brown, Lyman	M. A., Tor	Class	1903	10½	1½	.....	1,250	.....
	VanEvery, John Fair	B. A., Tor	Eng., Hist., Fr., Ger	1903	10	.....	.....	1,250	.....
	Dowkes, William J			1903	3	12	.....	850	.....
	Marlin, Lewis A. (Interim)			1906	½	10	.....	800	.....
	Pritchard, Frances P		(Household Science Instr.)	1907	.....	.....	.....	.....	600
	Cunningham, John H		(Manual Training Instr.)	1907	.....	.....	.....	900	.....
Perth	McKim, William Andrew	B. A., Tor	Eng., Hist., Fr., Ger	1900	9½	3	1200	.....	.....
	Fergusson, George Arthur	B. A., Tor	Class (Interim)	1905	3½	2	.....	1,000	.....
	Preston, Thomas	B. A., Tor	Sci.	1903	12	2	.....	900	.....
	Edmiston, James A			1893	13½	8½	.....	850	.....
	Frost, Francis Henry	B. A., Tor	Math	1906	12	2	.....	1,000	.....
Peterborough	Fessenden, Cortez	M. A., Trin	Math	1890	29	3	2000	.....	.....
	Kenner, Henry Rowe H	B. A., Tor	Class	1893	17½	½	.....	1,400	.....
	Srigley, Edgar Cooper		Commercial	1902	12	5½	.....	1,120	.....
	Hodgson, Joseph Emerson	B. A., Tor	Sci. (Interim)	1905	4½	4	.....	1,100	.....
	Weir, Annie	B. A., Tor	Eng., Hist., Fr., Ger	1904	9	6	.....	.....	1,100
	Merritt, Robert Norris	B. A., Tor	Math	1906	7½	2	.....	1,100	.....
	Bauer, Bertha Theresa (Int.)	B. A., Tor		1906	½	2	.....	.....	800
	Stubbs, Samuel Jas	B. A., Tor	Eng., Hist., Class	1907	10	3	.....	1,100	.....
Renfrew	McDowell, Charles	B. A., Queen's	Math	1879	29	5	1300	.....	.....
	Berlanquet, Hugh Smith	B. A., Queen's	Class	1904	3	.....	.....	900	.....
	Smith, Arthur	B. A., Tor	Sci.	1904	5½	3	.....	950	.....

	Bennett, Alice Maud	B. A., Tor.	Mods. and Hist.	1902	4½	2			750
	Ressor, Lillian M.		Commercial	1904	3½				800
	Johnston, Margaret J (Interim)		(Household Science Instr.)	1905	1½	½			600
Ridgetown	Little, John George	B. A., Tor	Math	1889	20	½	1300		
	Morrison, Edward (Interim)	B. A., Tor.	Sci.	1906	½	6		900	
	Andrews, Robert T.	B. A., Tor	Class.	1906	2½	12		900	
	Fleming, Maude E. (Interim)	M. A., Queen's	Mods. and Hist.	1906	1½				750
	Watterworth, Grace M.		Commercial	1907	6½	2			700
St Catharines	Henderson, John	M. A., Tor.	Class, Eng., Hist	1872	35	5	1700		
	Robertson, William John	B. A., Tor., LL. B., Vic.	Math.	1874	32			1,300	
	Conn, Henry	B. A., Tor.	Sci.	1906	9½	3		1,200	
	Cloney, Sarah Louise	M. A., Queen's	Eng., Hist., Fr., Ger.	1896	13	3			1,100
	Buchanan, John Alex		Commercial	1905	5	3		1,000	
	Cooper, Alexander B. (Interim)	B. A. Queen's		1906		13		900	
	Caverhill, Arthur E.			1894	12	15		900	
St. Mary's	Martin, Stephen	B. A., Tor.	Math.	1886	20	3	1,400		
	Somerville, Thomas C.	B. A., Tor.	Mods. and Hist.	1906	13	2		900	
	Williams, Wilbert Richard (In.)	B. A., Tor.	Sci.	1906	½			900	
	Jickling, Carrie Kathleen (Int.)	B. A., Tor.	Class	1906	½				800
	Thackeray, Barton E. (Int.)	B. A., Tor.		1906	1½	2½		800	
St. Thomas	Quance, Noah	B. A., Tor.	Class	1891	26		1,650		
	Stevenson, Orlando John	M. A., D. Paed., Tor.	Eng., Hist., Fr., Ger.	1897	15	2		1,300	
	Voaden, Arthur C.	B. A., Queen's	Commercial	1903	13	2		1,300	
	McGee, Cyril Houghton	B. A., Trin.	Math.	1902	10			1,200	
	Thompson, Peter McK.	M. A., Queen's	Sci.	1905	12	5		1,200	
	Cook, Margaret	M. A., Tor.	Eng., Hist., Fr., Ger.	1903	11				1200
	Webster, Samuel Charles	B. A., Tor.		1902	5	2		900	
	Pettit, Louis John (Interim)	B. A., Queen's	Eng., and His.	1905	1	3		900	
	Walker, Arthur J.			1903	3	8		850	
	Hedley, William Powell	B. A., Tor.	Math.	1906	2	8		850	
Sarnia	Crassweller, Christopher L.	B. A., Tor.	Math.	1902	22	2½	1,500		
	Grant, David M.	B. A., Tor.	Class.	1885	21			1,400	
	Dent, William Arthur		Sci.	1904	2	10		1,100	
	Fleming, Ethel May	B. A., Tor.	Mods. & Hist. (Int.), Eng. Hist.	1902	4½				1050
	Bridgman, Clara Mary		Commercial	1902	3	7			850
	Reid, Robert	B. A., Tor.	Eng. Hist., Fr. and Gr.	1906	13	4		1,050	
	White, Robert Oliver (Interim)		Math.	1907		14		1,000	
Seaforth	Rogers, George Franklin	B. A., Vic.	Sci.	1900	13½		1,425		
	Colling, George Featherstone	B. A., Tor.	Math.	1901	8½			1,100	

IV. List of Principals and Assistants of Collegiate Institutes and High Schools, January, 1907 — *Continued.*

Collegiate Institutes.	Names of Teachers.	Degrees.	Specialists.	Date of appointment.	No. of years' experience in a High School or Collegiate Institute.	No. of years in Public School.	Salary.		
							Principal.	Male Assistants.	Lady Assistants.
Seaforth—*Con.*	McLean, Robert Alex (Int.)	B.A., Queen's	Class	1907	1½	3	.....	1,000	.....
	Doherty, Mabel	.....	Commercial	1906	3½	3	.....	.....	775
	Steele, Flora Elizabeth (Int.)	B.A., Tor	Mods. and His.	1907	1	....	.....	.....	750
Stratford	Mayberry, Charles Alexander	B.A., LL.B., Tor.	Class	1891	24	2	1,800	.....	.....
	Robertson, Hugh Shaw	B.A., Tor	Math	1900	17	5	.....	1,250	.....
	Lennox, Thomas H	B.A., Tor	Sci	1900	20	2	.....	1,150	.....
	Stevenson, Andrew	B.A., Tor	Eng., Hist	1901	16	3	.....	1,150	.....
	Malcolm, George	B.A., Queen's	.....	1891	22	6	.....	1,100	.....
	Marty, Sophie E	M.A., Queen's	Eng., Hist., Fr., Ger	1900	14	4	.....	.....	1150
	Robertson, George D	B.A., Queen's	Art (Interim), Com	1903	14	5	.....	1,050	.....
	Delmage, Evelyn Euphemia	B.A., McMaster	Math	1905	4	....	.....	.....	850
	Adams, W. A.	.....	(Manual Training Instr.)	1901	.....	....	.....	.....	.....
	Lewis, Esther Pease Isabel	.....	(Household Science Instr.)	.....	.....	....	.....	.....	.....
Strathroy	Kerr, Charles Staple	B.A., Tor	Eng., His. (Inter.), Class	1906	19	....	1,300	.....	.....
	Auld, Charles	B.A., Tor	Math	1900	12	....	.....	1,050	.....
	Corkill, Edward James	B.A., Queen's,	Sci	1906	16	3	.....	1,000	.....
	Houston, Jessie	B.A., Tor	Mods. and Hist	1906	3½	....	.....	.....	900
	Kent, Eleanor	.....	Commercial	1899	10	2½	.....	.....	800
Toronto (Harbord St.)	Hagarty, Edward William	B.A., Tor	Class	1891	23½	....	2,000	.....	.....
	Balmer, Eliza May	B.A., Tor	Eng., Fr., Ger	1891	17½	1	.....	.....	2,000
	Lawler, Gertrude	M.A., Tor	Eng., Fr., Ger., Math	1891	16	....	.....	.....	2,000
	Smyth, Thomas Henry	M.A., B.Sc., Tor.	Sci	1891	17	4	.....	2,000	.....
	Cox, John Loane	B.A., Tor	Math	1892	29	....	.....	2,000	.....
	Glassey, David Alex	B.A., Tor	Class	1906	12	....	.....	1,500	.....
	Forfar, Charles	B.A., Tor	Eng., Fr., Ger	1892	17½	6	.....	1,600	.....

	Kennedy, Lyman Aaron	M.A., Vic.		1892	25½			1,600	
	Clark, Luther John	B.A., Queen's	Fr., Ger. (Interim)	1896	16½	6		1,600	
	Carstairs, John Stewart	B.A., Tor.	Eng., Hist.	1899	15½	7		1,550	
	Horton Charles W.	B.A., Queen's.	Eng., Hist.	1904	13½	8		1,250	
	Moore, James Rossington	M.A., Queen's	Sci.	1904	7½	½		1,250	
	Irwin, Herbert Wm.	B.A., Tor.	Mods. and Hist.	1905	4½			1,250	
	Fletcher, William Hugh	M.A., Queen's.	Sci., Com.	1905	10½	4½		1,200	
	Wren, John Stewart	B.A., Tor.	Math.	1906	7			1,200	
	Tapscott, Harry Byron (Int.)	M.A., McM. & Harvd.	Fr., Ger.	1906	2	6½		1,200	
	Thompson, John Fletcher	M.A., D. Paed, Tor.	Class	1906	9	1		1,200	
	Kennedy, Thomas	M.A., Queen's	Math.	1906	6	2¾		1,200	
	Jermyn, Percy Thomas	M.A., Tor.	Eng., Hist.	1906	6½	2½		1,200	
Toronto (Jameson Ave)	Smith, Gilbert Acheson	B.A., Tor.	Sci.	1889	25	4	2000		
	Birchard, Isaac J.	M.A., Ph. D., Tor.	Math.	1893	27	10		2,000	
	Crawford, Henry J.	B.A., Tor.	Class	1894	22			2,000	
	Spence, Nellie	B.A., Tor.	Class. Eng.	1889	18	1			2,000
	Hillock, Julia S.	B.A., Tor.	Fr., Ger.	1900	14				1,750
	Cosens, Absalom	M.A., Tor.	Sci.	1904	10	2		1,400	
	Sinclair, John	B.A., Tor.		1898	17	8		1,500	
	Watson, Erwin H. A.	B.A., Tor.	Mods. and Hist.	1904	6	3		1,250	
	Phillips, Wm. A.	B.A., Tor.	Fr., Ger., Eng.	1906	18	1½		1,200	
	Jewett, Albert E.	B.A., Queen's	Sci.	1906	20	3		1,400	
	Mills, Jno., Hudson	M.A., Queen's	Class	1906	16	1		1,200	
	Reid, Thos. Emerson (Interim)	B.A., Tor.		1904	1½	8		1,200	
Toronto (Jarvis St.)	Embree, Luther E.	M.A., Tor.	Class., Eng., Fr., Ger.	1906	34	5	3,500		
	Gray, Robert Alexander	B.A., Tor.	Math.	1900	22			1,750	
	Michell, William Chas.	B.A., Tor.	Class.	1897	17			1,750	
	Lehmann, Carl A. K.	B.A., Tor.	Sci.	1898	12	2		1,750	
	Shaw, George Edmund	B.A., Tor.	Eng., Fr., Ger.	1876	31			2,000	
	Jeffries, John	B.A., Tor.	Eng., Hist., Fr., Ger.	1907	19	1		1,400	
	Thomas, Janie	M.A., Tor.	Eng., Hist.	1882	24½	1			1,600
	Gundy, Henry Wentworth	B.A., Tor.	Class	1900	8	½		1,550	
	Wightman, Robert	B.A., Tor.	Math.	1903	9			1,300	
	Clarke, Fred Hall	B.A., Tor.	Eng., Hist. Fr. Ger.	1904	11			1,400	
	Ivey, Thomas Joyce	M.A., Tor.	Sci.	1904	10			1,250	
	Keillor, James	B.A., Queen's.	Eng., Hist.	1905	15	3		1,200	
	Spence, Augusta Grace W. (Int.)	B.A., Tor.	Mods. and Hist.	1907	1			1,200	
	Lougheed, Wm. James	M.A., Tor.	Math.	1907	3½	3½		1,200	
	Jennings, Wm. Arthur (Interim)	B.A., Tor.	Sci.	1907	½			1,200	
Toronto Junction	Colbeck, Franklin Charles	B.A., Vic.	Class., Eng.	1894	20	1½	2,000		
	Gourlay, Richard	B.A., Tor.	Class., Math.	1893	20			1,500	
	Charles, Henrietta	B.A., Tor.	Eng., Fr., Ger.	1901	20				1,200

IV. List of Principals and Assistants of Collegiate Institutes and High Schools, January, 1907.—*Continued.*

Collegiate Institutes.	Names of Teachers.	Degrees.	Specialists.	Date of appointment.	No. of Years' Experience in a High School or Collegiate Institute	No. of Years in a Public School.	Salary. Principal.	Male Assistants.	Lady Assistants.
Toronto Junction —*Con.*	Johnston, Frederick James	M.A., Tor.	Sci.	1904	9	3	.....	1200	.....
	Barnes, Charles Lancelot	B.A., Tor	Class. (Interim)	1901	3½	4½	.....	1050	.....
	McLellan, Catharine		Commercial (Interim)	1903	10	4	.....	.....	950
	Evans, William Arthur			1904	2	14	.....	900	.....
Vankleek Hill	Davidson, John H.	M.A., B. Paed., Tor.	Math	1906	4	7½	1100	.....	.....
	McGuirl, Thomas Henry	B.A., Queen's	Com	1906	7	5	.....	750	.....
	Trenaman, Mable Natalie	B.A., Tor	Mods. and Hist	1905	5	.....	.....	.....	625
	Parker, C. B. (Permit)	B.A., Tor.		1906	.....	.....	.....	900	.....
	Brown, Homer Grant (Permit)	B.A., Tor.		1907	.....	.....	.....	800	.....
Whitby	Hogarth, George Henry	B.A., Tor.	Math	1900	21	....	1,150	.....	.....
	Denyes, James Malcolm	B.A., Queen's	Fr., Ger	1903	9	3	.....	950	.....
	Scratch, Linnie May		Sci., Commercial	1905	10	1	.....	.....	950
	Pringle, E. Gertrude. (Inter.)	B.A., Tor.	Class	1906	1	1	.....	.....	800
Windsor	Gavin, Frederick Pearce	B.A., Queen's	Sci	1892	15	....	1,800	.....	.....
	Bell, Frederick Henry	B.A., Tor	Eng., Hist., Fr., Ger	1898	14	.....	.....	1,200	.....
	Messmore, Joseph Franklin	B.A., Tor	Class	1899	16	.....	.....	1,100	.....
	Neilson, James	C.A.	Commercial	1898	8	7	.....	1,100	.....
	Taylor, John Gladstone	B.A., Tor.	Math	1903	8	4	.....	1,100	.....
	Brunt, Robert Anthony	B.A., Tor.	Sci	1905	5	1	.....	1,100	.....
	Cleary, Norah	B.A., Tor.		1900	5½	....	.....	.....	900
	Eagle, David Melville (Interim)			1907	.....	9	.....	1,100	.....
Woodstock	Levan, Isaac Master	B.A., Tor.	Class., Eng., Mods.	1898	25½	....	1,600	.....	.....
	Cole, James McLarty		Sci	1898	15½	8½	.....	1,100	.....

	Overholt, Arthur Milton	M.A., McMaster	Math	1904	7	½		1,100	
	Elmslie, Wallace	B.A., Tor.	Mods. and Hist	1904	5½			1,000	
	Anderson, Wm. Geo	B.A., Tor.	Eng., Hist. (Int.), Class	1906	5½	3½		1,100	
	Edward, Frankland Ward (Int.)		Commercial	1905	1½			850	
	Miller, Eva Matilda	B.A., Queen's	Mods. and Hist. (Interim)	1903	3½				750
	Mercer, John S.		(Manual Training)	1905	6	6½		1,050	
High Schools.									
Alexandria	MacKay, Donald	M.A., Tor.	Class	1895	16		1,400		
	Lawlor, Richard G.	B.A., Queen's		1903	2½	8		900	
	Allen, Mabel E. (Interim)	B.A., Tor.		1907	1				800
Almonte	Treleavan, John Welsley	B.A., Tor.	Class	1902	15		1,100		
	McPhail, Alexander C.	B.A., Queen's		1899	14	9		800	
	Thompson, Margaret Jane	B.A., Queen's	Fr., Ger., (Interim), Eng., Hist.	1895	11	6			800
	Schell, Arthur William (Interim)			1905	2	3½		800	
Arnprior	Mabee, George Elliott	B.A., Tor.	Fr., Ger.	1905	13½		1,150		
	Campbell, Alexander	B.A., Tor.	Math	1906	17	3		900	
	Baird, Mabel Margaret J.	B.A., Tor.	Mods. and Hist.	1905	2				800
	Urquhart, May McDonald (Int.)	B.A., Tor.		1906	½				800
Arthur	Snider, Egerton Eber	B.A., Vic.	Math	1896	16½	2	1,300		
	Trench, Wycliffe W. A.	B.A., Tor.	Class (Interim)	1905	2½	5		950	
	Tupling, Minnie H. (Interim)			1907		7			500
Athens	Massey, Norman Levi	B.A., Vic.	Math	1898	19		1,150		
	Dowsley, William Clinton	M.A., Queen's	Class., Hist., Eng.	1899	7	4		950	
	Patterson, Ethel Hume (Interim)	B.A., Tor.	Mods. and Hist.	1906	½	2			700
	Graham, Robert Radie (Interim)	B.A., Queen's		1907	1½	3		825	
Aurora	Munro, Peter Fraser	M.A. Queen's, B.Pd. Tor	Class	1906	6	½	1,000		
	McBride, Sara Mabel			1902	5½				600
	Windsor, Annie (Interim)	B.A., McMaster	Math	1906	½				600
Beamsville	Bruels, Ira Delos	B.A., Queen's	Sci.	1906	19	15	1,000		
	Jenkins, Myrtle Mellaney			1905	3	2			500
Belleville	Milburn, Edward Fairfax	M.A., Trin.		1893	33		1,200		
	Knight, William W.	B.A., Queen's	Math	1892	20	5		1,000	
	Clarke, Henry Jellyman	B.A., Queen's	Sci.	1892	15	3½		1,000	
	McRae, Jessie Carre		Art (Interim)	1889	18	1			700
	Whitley, Lester Robert	B.A., Tor.	Mods. and Hist.	1905	4½			1,000	
Bowmanville	Elliott, John	B.A., Queen's	Math., Eng.	1906	23	5	1,200		

IV. List of Principals and Assistants of Collegiate Institutes and High Schools, January, 1907.—*Continued.*

High Schools.	Names of Teachers.	Degrees.	Specialists.	Date of appointment.	No. of years' experience in a High School or Collegiate Institute.	No. of years in Public School.	Salary.		
							Principal.	Male Assistants.	Lady Assistants.
Bowmanville—*Con.*	Allin, Elizabeth A	M.A., Tor	Fr., Ger	1902	7	2½	....	.....	900
	Carpenter, Wm. Grant (Interim)	B.A., McMaster	Sci	1905	1¼	5	.....	1,000	.....
	Cameron, Archibald R. (Interim)	B.A., Queen's	Class	1906	2½	.....	.....	1,000	.....
Bradford	Carefoot, George Andrew	B.A., Queen's	Sci	1905	10	6	1,000	.....	.....
	Nelson, Albert E. (Interim)	.....	.....	1905	1¼	5	.....	750	.....
	Dickson, Jean Gilbert (Interim)	B.A., Tor	Mods. and Hist	1905	1½	.....	.....	.....	650
Brampton	Fenton, William J	B.A., Tor	Class	1894	16	1½	1,500	.....	.....
	Liebner, Ernest Oscar	B.A., Queen's	Sci	1905	14	.....	.....	1,000	.....
	Galbraith, William James	B.A., Trin	Fr., Ger	1887	23	12	.....	1,000	.....
	Shields, Alexander M	B.A., Tor	Eng., Hist	1902	26	.....	.....	1,000	.....
	Hahan, Lemen R	M.A., Trin	Math	1905	5	3	.....	1,000	.....
Brighton	Newman, George Edmund	B.A., Queen's	Fr., Ger., (Interim) Eng., Hist	1896	14	5	1,000	.....	.....
	Burke, Alexander	.....	.....	1895	12	10	.....	825	.....
	Preston, Ethel Ada. (Interim)	.....	.....	1906	2	½	.....	.....	600
Caledonia	Seaton, Edward T	B.A., Queen's	Math	1901	16	2½	1,100	.....	.....
	Mitchener, James Lidney (Interim)	B.A., McMaster	Sci	1906	½	11	.....	800	.....
	Corry, Ray Laura (Interim)	B.A., Trin	.....	1907	.....	.....	.....	.....	700
	Campbell, Estella Kate (Interim)	.....	.....	1905	½	2½	.....	.....	500
Campbellford	Hamilton William John	B.A., Queen's	Sci	1906	6	15	1,300	.....	.....
	Boyes, Robert	.....	Math	1895	16	5	.....	1,000	.....
	Hodgson John Eastwood	M.A., Tor	Eng., Class	1906	.....	.....	.....	1,100	.....
	McRae, Donella Maud	B.A., Queen's	Mods. and History	1907	3½	2	.....	.....	800

Carleton Place	Rand, Wilfrid Erle	B.A., Tor.	Math	1902	14	1	1,200		
	Wilson, R. Albert...(Interim)	M.A., Ph.D., Queen's.	Eng., History	1906		4½		900	
	McDonald, Neil			1890	16	6		850	
	Tapscott, Cora Ida	B.A., Tor		1905	3	4			750
Cayuga	Skeele, James Eton	B.A., Tor		1897	14		1,100		
	Lick, Addie	B.A., Tor.	Math	1903	5½				800
	McCollum, A. Laura (Interim)			1906	1	1½			550
Chesley	Luton, James T.	M.A., Tor.	Class	1905	7	7	1,200		
	Longman, Edwin		Math	1904	18	7		850	
	King, Elizabeth Giffard ...(Interim)	M.A., Tor.	Math	1906		1			800
	Tompkins, Louise Harris ...(Interim)	B.A., Queen's	Mods. and Hist	1906		1			700
Colborne	Bellamy, Wesley	B.A., Vic		1902	17	3½	1,000		
	Russell, Fanny Josephine ....(Interim			1907		4			600
Cornwall	MacLean, Allan Edmund	B.A., Queen's	Fr., Ger	1898	14½	5	1,350		
	Nugent, James			1884	25½	6½		1,100	
	Crewson, Joseph W	B.A., Vic	Class	1902	15	5		1,050	
	Fetterly, Hiram B.	M.A., Queen's	Sci.....(Interim)	1904	2½	10		1,050	
	Birchard, Alexander Fraser		Commercial.....(Interim)	1898	12	12		900	
	Patterson, Arnott Martin ...(Interim)			1906	1½			800	
	Wegg, Charlotte Sophia	B.A., Tor.		1906	2				700
	Healey, Rose Etta...(Interim)	B.A., McGill		1907					650
Deseronto	Whyte, Robert	B.A., Tor		1896	11	4	1,050		
	Sexsmith, William Newton ...(Interim)	B.A., Tor.		1904	2½	3		850	
	McEachran, Mary...(Interim)	B.A., Queen's		1906	½	7			700
Dundas	Saunders, William Robert	B.A., Queen's		1903	6½	4½	1,100		
	Lemon, Annie M....(Interim)	B.A., Tor.	Class	1907	½				850
	Armstrong, Mabel Gertrude ...(Interim)	B.A., Tor.		1905	1½	1½			650
Dunnville	Witton, James Gayford	B.A., Tor.	Math	1903	16		1,100		
	Asselstine, Robert Whiting	B.A., Queen's		1904	6	3		1,000	
	Saunders, Charlotte Annie	B.A., McMaster	Sci	1906	2	1			1,000
Dutton	Smith, James Harvey	M.A., Queen's	Sci	1906	16	7	1,100		

IV. List of Principals and Assistants of Collegiate Institutes and High Schools, January, 1907.—*Continued.*

High Schools	Names of Teachers.	Degrees.	Specialists.	Date of appointment.	No. of years' experience in a High School or Collegiate Institute.	No. of years in a Public School.	Salary.		
							Principal.	Male Assistants.	Lady Assistants.
Dutton—*Con.*	McKay, John Malcolm (Interim)	B.A., Queen's		1906	1	7	.....	800	.....
	Osgoode, Joseph Arthur (Interim)	B.A., Queen's	Class	1906	1	1	.....	650	.....
	Thompson, Flossie Adina (Interim)	B.A., Tor.	Mods. and Hist.	1906	1	....	.....	.....	550
East Toronto	French, Fred. William	B.A., Tor.	Class	1903	16	....	1,250	.....	.....
	Graham, Louis Hartley	M.A., Tor.	Sci.	1903	7	....	.....	950	.....
	Campbell, Edith (Interim)	B.A. Tor.	Mods. and Hist.	1906	1	....	.....	.....	700
Elora	Andrews, David	M.A., Queen's	Math (Interim)	1906	$2\frac{2}{12}$	5	1,000	.....	.....
	Blyth, Sara (Interim)	.....	.....	1905	$1\frac{1}{12}$	7	.....	.....	600
	McQueen, Rose J.	.....	.....	1904	$3\frac{1}{2}$	$1\frac{1}{2}$	.....	.....	550
Essex	Anglin, Robert W.	M.A. Queen's.	Math	1902	$8\frac{1}{2}$	....	1,200	.....	.....
	Teskey, Edith A.	M.A., Tor.	Class.	1901	9	....	.....	.....	1,000
	Boyd, Annie Alicia	M.A., Queen's.	Com. (Interim) Sci.	1906	$2\frac{1}{2}$	8	.....	.....	900
	Williams, Mary Isabella (Inter.)	B.A., Queen's.	Mods. and Hist.	1906	.....	.....	.....	.....	650
Fergus	Freeman, John Alexander	B.A., Tor.	Class.	1903	19	....	1,100	.....	.....
	Odlum, Eleanor Dora.	B.A., Trin.	Mods. and Hist.	1903	4	1	.....	.....	650
	Gordon, Mary M. (Interim)	.....	.....	1906	1	$3\frac{1}{2}$	.....	.....	600
	Ferguson, John (Permit)	B.A., Queen's.	.....	1906	.....	.....	.....	800	.....
Forest	Barron, Robert Armour	B.A., Tor.	Class., Eng., Fr., Ger.	1905	24	5	1,000	.....	.....
	Williams, Albert	.....	.....	1906	2	5	.....	750	.....
	McRae, Donella Maud	B.A., Queen's.	Mods. and Hist.	1905	$3\frac{1}{2}$	2	.....	.....	700

Fort William	Pilkey, Peter Joseph	B.A., Queen's		1901	7½	8	1,400		
	Wood, Elmore Everton	B.A., McMaster	Math	1902	5½			1,200	
	Calhoun, Alexander (Interim)	M.A., Queen's	Class	1906	½			1,200	
Gananoque	Graham, Robert George	B.A., Vic	Math	1894	15½		1,250		
	Galbraith, Thomas Maxwell	B.A., Queen's		1905	4	5		1,000	
	Keefe, Reuben Daniel	B.A., Tor		1906	4½			950	
	Walsh, John C. (Interim)	B.A., Ottawa		1906	½			700	
Georgetown	Coutts, Richard David	B.A., Tor	Class	1897	11½	3	1,200		
	Cantelon, John W. (Interim)	M.A., Tor	Math	1906	½			900	
	Hicks, Fred Montford (Interim)			1906	1½	2½		800	
	Eby, Florence Mary (Interim)	B.A., Tor		1906	2½				600
Glencoe	Foucar, Walter K	M.A., Tor	Eng., Hist., Fr., Ger	1905	11½		1,000		
	Fairchild, Austin H	B.A., McMaster	Math	1905	2½	5		875	
	Cruikshank, Libbie (Interim)			1905	1½	5			600
Gravenhurst	Keith, George Walter	B.A., Tor	Math	1904	8½		1,100		
	Filshie, Marion W. (Interim)	B.A., Tor		1905	1½				550
	Broughton, Clara E. (Interim)			1906	1				400
Grimsby	Harrison, Charles W	M.A., Vic		1894	20		900		
	Strang, Rose Innis			1900	12				600
Hagersville	Elliott, Thomas Edward	B.A., Tor	Eng., Hist., Fr., Ger	1905	19		1,000		
	Lemon, Mary (Interim)	B.A., Tor	Math	1906					700
	Wright, Robert			1896	11	4		775	
Harriston	Robertson, Alexander Morton	M.A., Queen's	Math., Fr., Ger	1906	12	3	1,000		
	Donaldson, William	B.A., Tor	Sci. (Interim)	1906	7	6		900	
	May, Annie (Interim)	B.A., Tor	Class	1905	2	1			700
	McKee, Hannah (Interim)			1906	1	17			475
Hawkesbury	O'Hagan, Thomas	B.A., Ottawa		1906	6½	12	1,000		
	Higginson, Maria Adelaide			1897	9½	2½			700
	Penson, Elizabeth (Interim)			1906	½	1			700
Iroquois	Stanley, Thomas E. A	B.A., Tor	Math	1897	14		1,125		
	McGuire, James F	M.A., Queen's	Sci	1905	3½	10		925	
	Rose, Marion H		Fr., Ger	1898	8½	4			800
	Connor, Grace L. (Interim)	M.A., Queen's	Class	1906	½				700
Kemptville	Sexton, James Henry	M.A., Queen's	Sci	1905	9	9	1,100		
	Nelson, John	B.A., Queen's	Math	1906	14	4		925	

IV. List of Principals and Assistants of Collegiate Institutes and High Schools, January, 1907.—*Continued.*

High Schools.	Names of Teachers.	Degrees.	Specialists.	Date of appointment.	No. of Years' Experience in a High School or Collegiate Institute.	No. of Years in Public School.	Salary.		
							Principal.	Male Assistants.	Lady Assistants.
Kemptville—*Con.*	Bibby, Maria Victoria	B.A., Tor.	Mods. and Hist	1904	2½	....	.....	.....	650
	Cowan, Margaret Taylor (Int.)	B.A., Tor	Class	1906	½	....	.....	.....	700
	Keegan, Joseph D...(Interim)			1905	1½	13	.....	600	.....
Kenora	Roberts, Thomas Henry	B.A., Tor		1902	4	4	1,300	.....	.....
	Wilson, W. Asbury	B.A., Queen's		1903	7	....	.....	1,200	.....
	Fife, Mary Hannah A	B.A., Tor., M.A., Harv.		1906	4	....	.....	.....	900
Kincardine	Perry, Samuel Walter	B.A., Vic	Class	1890	25	....	1,300	.....	.....
	Courtice, Samuel James	B.A., Tor	Math	1903	6	6	.....	1,000	.....
	McRitchie, Alex. Robinson	B. A., Tor	Sci	1906	12	7	.....	1,050	.....
	Teskey, Kathleen....(Interim)	M.A., Queen's	Mods. and Hist	1905	1½	½	.....	.....	750
Leamington	Tremeer, James	B.A., Vic	Class	1906	19	3	1,100	.....	.....
	Closs, Frank David		Sci	1905	10	2½	.....	750	.....
	Brown, George Allen (Interim)	B.A., Tor	Math	1906	¾	½	.....	800	.....
	McPherson, Hattie Georgina	B.A., Queen's	Mods. and Hist	1906	6	....	.....	.....	700
Listowel	Nichol, William Wallace	B.A., Tor	Math	1898	8½	1½	1,100	.....	.....
	Ramsay, William	B.A., Queen's	Class	1905	2	6	.....	1,050	.....
	McCormack, Samuel G. (Inter.)	M.A., Queen's		1906	1½	....	.....	900	.....
	Clayton, Vivian Emily (Interim)	B.A., Manitoba	Com	1906	1	3	.....	.....	700
Lucan	Sprung, Whitfield Lyman	B.A., Tor	Math	1906	3	4½	1,000	.....	.....
	Dearness, Jean M....(Interim)	B.A., Western		1906	½	....	.....	.....	550
	Mara, Ida M			1903	3½	1	.....	.....	550
	Tuke, William H ...(Interim)			1905	1½	....	.....	625	.....
Madoc	Watson, Alexander H	B.A., Tor.		1889	24	3	1,100	.....	.....

	Leighton, Edna C. ....(Interim)			1907	2½	2			800
	Tuer, Margaret .....(Interim)			1907		6½			550
Markham	Reed, George Henry	M.A., B. Paed, Tor.	Class	1890	18	4	1,200		
	Truscott, Samuel A. ..(Interim)	M.A., Queen's	Math	1906	1½	6		900	
	Mairs, Edith Matilda	M.A. Trin		1903	4				600
	McEachern, Neil	B.A., Tor.	Sci	1906	11	5		800	
	Thomson, Olive M. ..(Interim)			1906	1	4			500
Meaford	Cornwell, John Leslie	B.A., Tor	Math	1900	19½		1,300		
	Dundas, Arthur A	B.A., Tor		1897	10	2		1,000	
	Francis, Annie Buchan	B.A., Tor	Mods. and Hist	1904	4				800
	Baker, Albert Henry..(Interim)	B.A., McMaster	Sci	1905	1			900	
	Hammond, John E. .(Interim)			1906	½	3		750	
Midland	Simpson, Ernstein	B.A., Tor	Math .....(Interim)	1904	4½	3	1,200		
	Class, William Arthur	B.A., Tor		1904	3½	2		950	
	Smith, Lillias Pearl..(Interim)	B.A., Tor		1904	2½				675
	Grove, Wilmot George (Interim)	B.A. Queen's	Math	1906	½			700	
Mitchell	Morrow, John D	B.A., Tor	Class	1905	10½		1,075		
	Stephens, Robert H			1902	4½	7		750	
	Strang, Grace Masson..(Interim)	B.A., Tor	Mods. and Hist	1906	½				700
Mount Forest	Brethour, John Henry	B.A., Vic	Class	1891	26	5	1,200		
	Glanfield, William John..(Int.)	B.A., Tor	Sci	1907	1	2		900	
	Clarke, George A. ...(Interim)			1905	1½	6		850	
Newburgh	Nesbit, David Ashton	B.A. Queen's	Eng	1893	18	13½	1,100		
	Millar, Frederick Gourlay	B.A., Tor		1903	7½			750	
	Beaman, Grace Evelyn..(Int.)			1906	⅜	1½			700
Newcastle	Davidson, Hugh	B.A., Tor		1888	21	19	900		
	Grose, Annie R. .... (Interim)			1905	1½	6½			450
Newmarket	Coombs, Albert Ernest	M.A., B. Paed, Tor.	Class	1899	14½		1,125		
	Hollingshead, John Edwin			1884	22	2½		850	
	Lawr, Waldon .....(Interim)			1906	1	5		850	
Niagara	Wright, William Jonathan	M.A., Tor	Class	1904	5½	3	900		
	Anderson, Lillie Catharine			1904	3	3½			475
Niagara Falls South	Fitzgerald, Eliza S	M.A., Queen's	Class	1904	22		1,200		
	Harvey, Martha Anne (Interim)	B.A., Tor	Math	1906	1				700
	Smith, Gladys Hubner. ..(Int.)			1907					500

IV. List of Principals and Assistants of Collegiate Institutes and High Schools, January, 1907. *Continued.*

High Schools.	Names of Teachers.	Degrees.	Specialists.	Date of appointment.	No. of Years' Experience in a High School or Collegiate Institute.	No. of Years in Public School.	Salary. Principal.	Male Assistants.	Lady Assistants.
North Bay	McKinley, James Matthew	B.A., Tor.	Class	1904	7½	....	1,350	.....	.....
	Girdwood, Arthur Reginald	B.A., McMaster	Math.	1904	3½	....	.....	1,200	.....
	Barr, Jean	B.A., Queen's		1903	11	3	.....	.....	900
Norwood	Davidson, John	M.A., LL.B., Vic.	Class	1882	27	3	1,100	.....	.....
	Archer, Mary Alice	B.A., Tor.		1904	3	....	.....	.....	700
	Norris, Arthur David (Interim)			1907	½	7	.....	650	.....
Oakville	Lillie, John Turner	B.A., Vic.	Class	1905	20	....	1,200	.....	.....
	Hobbes, Thomas	B.A., Tor.	Math.	1906	4	5½	.....	800	.....
	Pierce, Ada E. (Interim)	B.A., Queen's		1906	1½	1½	.....	.....	750
Omemee	Jardine, William Wilson	B.A., Tor.		1898	23	12	850	.....	.....
	Harvey, William Blakely			1903	25	14	.....	700	.....
Orangeville	Steele, Alexander	B.A., Tor.	Eng., Math.	1879	27	....	1,400	.....	.....
	Dunkley, Albert Wesley	M.A., Queen's	Class	1901	6½	....	.....	1,000	.....
	Calvert, Joseph Fletcher (Int.)	M.A., McMaster	Sci.	1906	2	1½	.....	900	.....
	Hutchinson, May Riordan			1904	4	6	.....	.....	600
	McConkey, C. M. R. (Interim)	M.A., Queen's	Fr., Ger.	1906	1½	....	.....	.....	750
Oshawa	Smith, Lyman C.	M.A., Vic.	Class., Eng., Hist.	1882	29½	2	1,300	.....	.....
	Slemon, Edward T.	B.A., Vic.	Math.	1892	14	5½	.....	1,000	.....
	Stevenson, Louis	B.A., Vic.	Math., Sci.	1902	14½	3	.....	1,000	.....
	Wilson, Mary Agnes	B.A., Tor.	Mods. and Hist.	1905	2½	....	.....	.....	750
	Milne, Thomas Frederick (Int.)		Commercial	1906	1	5½	.....	800	.....
Paris	Bell, Walter N.	B.A., Tor.	Class	1898	16	..	1,400	.....	.....

	Hedley, Robert Wesley	B.A., Tor.	Math	1903	4½	3		1,000	
	Youngson, Mary....(Interim)	B.A., Queen's		1906	2½	2			750
	Cunningham, Evangeline G (Int)	B.A., Tor.		1906	2½				600
Parkhill	McDougall, Neil	B.A., Tor.	Sci	1896	12½	3	1,100		
	Guest, Emily Jane	M.A., Tor.	Eng., Hist	1901	5½				900
	Cornell, May B....(Interim)	B.A., Tor.	Mods. and Hist	1906					600
	Skitch, Ernest Frederick		Com.....(Interim)	1906	2½	2		700	
Pembroke	Ross, Ralph	B.A., Tor.	Class	1895	20		1,350		
	White, Edwin Theodore	B.A., B. Paed, Tor.	Math	1901	6½	3		1,050	
	Shirreff, Robert Marshall		Fr., Ger.	1895	11			950	
	Forrest, William	B.A., M. D., Tor.	Sci	1906	16	7		1,000	
Penetanguishene	Allingham, Thos. D..(Interim)	M.A., Tor.	Eng., Hist	1906	½	16	1,000		
	Keogh, Lucius R.....(Interim)			1906	½	8½		800	
	Seery, Winifred.....(Interim)			1906	½	3½			600
Petrolea	Bell, John Johnstone	B.A., Tor.		1886	21	1	1,200		
	Clyde, William	M.A., Queen's		1886	20	1		1,050	
	Hills, Minnie	B.A., Tor.	Math	1903	5				1,000
	Hagan, James William			1906	2	5		900	
Picton	Dobson, Robert	B.A., Vic.	Math	1880	42	3½	1,200		
	Dolan, John Henry	B.A., Queen's	Class	1899	8			1,100	
	Bigg, Edmund Murney	M.A., Tor.	Sci	1906	30			1,000	
	Gilchrist, Dugald A..(Interim)	B.A., Tor.	Eng., Hist	1905	1½	7		900	
	Moorish, Celia W...(Interim)	B.A. Tor.	Mods. and Hist	1905	1½				800
Plantagenet	Finn, Joseph Peter....(Permit)	B.A., Queen's		1905	2	14	1,200		
	McIntyre, Lizzie E...(Interim)			1907		4			500
Port Arthur	Howell, William, B. L.	B.A., Tor.	Class	1904	10		1,300		
	McNab, Geo. Gibbon	M.A., Queen's	Math	1904	2½	5		1,100	
	Aitchison, Belle			1903	11	3			725
Port Dover	Liddy, William R.	B.A., Tor.	Sci	1897	10	4½	1,000		
	Buchanan, Mabel A..(Interim)	B.A., Queen's		1906	1½				600
Port Elgin	Clark, Joseph Campbell	B.A., Tor.	Class	1905	13	3	1,050		
	Innes, Alexander, R.			1892	18	3		800	
	Ferguson, Elma Slater			1904	2½				600
Port Hope	Kirkconnell, Thomas A	B.A., Queen's	Math	1888	21	3	1,550		
	Stoddart, Robert	B.A., Tor.	Class	1905	10			1,000	

IV. List of Principals and Assistants of Collegiate Institutes and High Schools, January, 1907 — *Continued.*

High Schools.	Names of Teachers.	Degrees.	Specialists.	Date of appointment.	No. of Years' Experience in a High School or Collegiate Institute.	No. of Years in a Public School.	Salary.		
							Principal.	Male Assistants.	Lady Assistants.
Port Hope *Con.*	Morgan, John James	B.A., Tor.	Sci.	1905	11	3	.....	1,000	.....
	Ward, Clara Anne	B.A., Tor.	Mods. and Hist.	1906	4½	....	.....	.....	800
	Moir, Catharine Elizabeth	.....	.....	1896	12⅔	4	.....	.....	700
Port Perry	McBride, Dugald	B.A., Vic.	Class., Math.	1871	35	14	1,300	.....	.....
	Stone, George	.....	.....	1883	25	4	.....	1000	.....
	Smith, Annie Maria	B.A., Tor.	.....	1904	3	....	.....	.....	600
	Young, Albert (Interim)	.....	.....	1905	1	....	.....	600	.....
Port Rowan	Pugsley, Edmund	B.A., Vic.	Sci.	1896	15	....	1,000	.....	.....
	Shawcross, Mary Louise	.....	.....	1903	3½	2	.....	.....	550
Prescott	Rose, Robert Charles	B.A., Tor.	Math.	1896	15	3½	1,200	.....	.....
	Weese, Willametta (Interim)	B.A., Queen's	.....	1906	2	....	.....	.....	650
	McKinley, Clara B. (Interim)	B.A., Tor.	Class	1906	....	....	.....	.....	650
Richmond Hill	Shaw, Robert	B.A., Tor.	Math.	1902	5¼	3	1,000	.....	.....
	Morden, Frances (Interim)	B.A., Tor.	.....	1906	2	2	.....	.....	650
	Edwards, Mabel Cordelia (Int.)	.....	.....	1906	....	....	.....	.....	450
Rockland	Haviland, Hugh Johnston	B.A., Tor.	Class.	1907	6	2	1,000	.....	.....
	Sweeney, Agnes C. (Interim)	.....	.....	1905	1½	3½	.....	.....	500
	Larocque, V. Alice (Permit)	.....	.....	1906	1	1½	.....	.....	400
Sault Ste. Marie	Race, Wilfred Ballentine	B.A., Queen's	Mods. and Hist.	1904	14	....	1,400	.....	.....
	Rudlen, George William	B.A., Tor.	Math.	1904	8⅔	....	.....	1,100	.....
	Williams, Lorne Joseph	B.A., Queen's	.....	1906	7½	2½	.....	1,100	.....
	Harkness, Mary Dell (Interim)	M.A., Queen's	.....	1907	.....	5	.....	.....	800

Simcoe	Christie, James Douglas	B.A., Tor.	Eng., Fr., Ger.	1889	31	1,300		
	Might, Lincoln	M.A., Queen's,	Sci.	1905	11	3	1,100	
	Lingwood, Frederick H.	M.A., Trin., B.A., Lon., Eng.	Class	1904	14		1,000	
	Hutchison, Robert A. (Interim)	B.A., Queen's	Math	1906	2	7	1,000	
	Goodland, Alma (Interim)			1907		12		700
Smith's Falls	Houston, John Arthur	M.A., Trin	Math	1887	29	3	1,300	
	Smith, Thomas Corlett	B.A., Queen's	Sci. (Interim)	1903	7	14	1,000	
	Lunny, Rosemary	B.A., McGill		1904	2½			700
	Miller, Everton E. (Permit)	B.A., McMaster		1907			800	
Smithville	Houston, John	M.A., Tor.	Eng., Fr., Ger	1907	28	6	1,000	
	Hill, Mary Alpena			1902	5	3½		550
Stirling	Kennedy, George E.	B.A., Vic	Sci.	1893	14	4	1,000	
	Hamilton, Margaret Alison (Int)	B.A., Tor.	Mods. and Hist	1906	½	½		600
	Baker, Sarah Jane (Interim)			1906	½	3½		550
Streetsville	Cameron, Aldis W.	B.A., Tor.	Eng., Hist	1898	13½	1,000		
	Bell, James Stewart (Interim)			1906	½	2	700	
	Rose, Lizzie L. (Interim)		Com	1906	½	1½		500
Sydenham	Henry, Thomas McKee	B.A., Tor.	Math	1903	24	4	1,150	
	Ewing, Florence May	B.A., Queen's		1904	2½	2		725
	McKerracher, Florence Jennie (Interim)			1906				850
Thorold	Bald, William Francis	B.A., LL.B., Tor.	Class	1898	16	3	1,200	
	Smith, Margaret Hübner			1898	10			700
Tillsonburg	Minns, James Edward	B.A., Vic	Sci., Math	1904	16	3	1,200	
	Kidd, Wm. Levingston (Int.)			1905	2	9	800	
	Tate, Mabel Ethel (Interim)	B.A., Tor.	Class	1906	2			750
	Hindson, Hilda Mary			1904	3	6		600
Toronto Technical	Eldon, Robert Henry	B.A., Queen's	Math., Com.	*1904	15	7	2,500	
	Young, William D.	B.A., M.D., Tor.		1899	7		1,750	
	McBean, John Wm.	B.A., Tor.		1902	4		1,600	
	Kirkland, William Stuart	M.A., Queen's	Sci.	1903	10½	1	1,550	
	Warren, James McIntosh	B.A., Tor.	Math.	1903	12½		1,600	
	Ward, William	B.A., Queen's	Com.	1906	12		1,400	
	McPherson, Walter Ernest	B.A., Tor., LL.B., Qu'ns	Eng., Hist., Fr., Ger.	1904	10½		1,400	
	Wilson, William James (Int.)	B.A., Tor.	Sci.	1902	4½		1,300	
	Baird, William		Com.	1903	4	4	1,300	

* Dates of appointment to the school, which became a High School in 1904.

IV. List of Principals and Assistants of Collegiate Institutes and High Schools, January, 1907.—*Continued.*

High Schools.	Names of Teachers.	Degrees	Specialists.	Date of appointment.	No. of Years' Experience in a High School or Collegiate Institute.	No. of Years in a Public School.	Salary.		
							Principal.	Male Assistants.	Lady Assistants.
Toronto Tech.—*Con.*	Rutherford, William Herbert	M.A., Tor.	Math.	1904	3½	....	....	1,300	....
	Rundle, John Ashton	....	....	1904	2	18½	....	1,300	....
	Wood, Frank Herbert (Interim)	B.A., Tor.	Math.	1905	1	....	....	1,300	....
	Guillet, Cephas	B.A., Vic., Ph.D., Clark	Eng., Fr., Ger.	1904	9	5	....	1,300	....
	Tennant, Isabella Leathern	B.A., Tor.	Mods. and Hist.	1904	5	....	....	....	1,300
	Downey, Helen Elizabeth	B.A., Tor.	Mods. and Hist.	1904	6	....	....	....	1,300
	Peake, Charles Nicholson	....	(Instructor in Drafting)	1898	....	....	....	1,300	....
	*Mackenzie, John Alexander	....	(Instructor in Architecture)	1906	....	....	....	550	....
	*Hahn, Gustav	....	(Instructor in Design)	1902	....	....	....	1,000	....
	*Banks, John Lisney	....	(Instructor in Modelling)	1906	....	....	....	600	....
	Davidson, Margaret Mary	....	(Instructor in Household Sci.)	1902	....	....	....	....	1,300
	Marshall, Isabella Currie	....	do.	1903	....	....	....	....	800
	Macmillan, Margaret	....	do.	1903	....	....	....	....	750
	*Hahn, Emanuel	....	....	....	....	....	....	....	....
	†Maynard, Carmen Moses	....	....	....	....	....	....	....	....
	†Barber, Frank	....	....	....	....	....	....	....	....
	†Rumdle, Isaac Albert (Interim)	....	Math., Com.	....	....	....	....	....	....
	†Ronan, Gladys	....	....	....	....	....	....	....	....
	†DeLaporte, Marie Annette	....	....	....	....	....	....	....	....
	†Edwards, Emma May	....	....	....	....	....	....	....	....
	†Kent, Charlotte Grace	....	....	....	....	....	....	....	....
Trenton	Ingall, Elmer Ellsworth	B.A., Tor.	....	1895	16	5½	1,200	....	....
	Cranston, David Loudon	B.A., Tor.	Math.	1906	3½	....	....	1,000	....
	Pattee, Mrs. Ada	....	Eng., History	1905	20	....	....	....	800
	White, Minerva Margaret (Int.)	....	....	1906	½	10	....	....	500

Uxbridge	Park, Henry George	B.A., B.Pæd., Tor.	Class	1888	23	7	1,100		
	Tanton, John (Interim)			1906	½	¾		650	
	Wilkie, Marion Florence (Int.)	B.A., Tor.	Fr., Ger	1905	1½				600
	Wilson, Ethel Mae			1904	2½	3			500
Vienna	Bonis, Henry	B.A., Tor.	Class	1905	16½	1	850		
	Cummer, May Elvina (Interim)			1906	½				600
Walkerton	Morgan, Joseph	M.A., Tor.	Class	1881	27		1,300		
	Norris, James	M.A., Queen's	Math	1903	16	3		1,000	
	Day, Alfred Ernest	M.A., Queen's	Eng., Hist., Fr., Ger	1901	9			900	
	Cheswright, Richard C.		Sci	1900	19	8		900	
Wardsville	Dickey, Mary Ada	B.A., Tor	Mods. and Hist	1906	4		800		
	Goulding, Hannah Mitchell			1902	4½	2½			500
Waterdown	Perry, Peter	M.A., Tor.	Class	1902	29		1,000		
	Ricker, Harry E. (Interim)			1906		8		700	
	Reid, E. Lily (Interim)			1906		3			400
Waterford	Hume, John Patterson	B.A., Queen's	Sci	1906	15½		1,100		
	Zavitz, Arthur Stanford (Int.)			1906	½	3		700	
	Culver, Mabel Elida (Interim)	B.A., McMaster		1905	1½				550
Watford	Potter, Charles	B.A., Tor	Math	1892	20	5	1,100		
	Forbes, William Brownie		Sci	1906	11			800	
	McCaw, Hester E. A. (Interim)			1905	1	½			550
	Mitchell, Blanche H. (Interim)			1906		4			475
Welland	McQuaig, Herbert M.	B.A., Queen's		1891	21		1,200		
	McNiece, James	B.A., Tor	Sci.	1896	11	3		1,200	
	Fortner, Miss Theodore G.	B.A., Tor	Mods., Hist.	1906	2½				600
	Brennan, Jennie L. (Interim)			1906	½	5			550
Weston	Campbell, Archibald Louis	M.A., Queen's	Math (Interim)	1906	13	8	1,000		
	Hawkins, Maud Mary	B.A., Tor	Mods. and Hist	1904	6				700
Wiarton	Baines, Archibald W.	M.A., Trin		1895	12	4	1,000		
	Case, H. James (Interim)			1906	½	13		800	
	McDougall, Isabella J. (Interim)	B.A., Tor	*Eng. Hist., Fr. and Ger	1906	½	3			700

* Part time teachers—Day and Evening School.
† Part time teachers—Evening School only.

IV. List of Principals and Assistants of Collegiate Institutes and High Schools, January, 1907.—*Continued.*

High Schools.	Name of Teachers.	Degrees.	Specialists.	Date of appointment.	No. of Years' Experience in a High School or Collegiate Institute.	No. of Years in a Public School.	Salary.		
							Principal.	Male Assitants.	Lady Assistants.
Williamstown	McDonald, James	M.A., Queen's	Eng. Hist., Class	1898	13	....	1,200	.....	.....
	Witheril, Ebenezer Rufus	B.A., Queen's		1895	13	20	.....	900	.....
	Shepherd, Martin Ward	B.A., Tor		1903	5	9	.....	900	.....
Wingham	Taylor, John Andrew	B.A., Queen's	Sci	1906	8	3	1,200	.....	.....
	Workman, James G. (Interim)	B.A., Tor	Math	1906	1	2	.....	900	.....
	Smith, John Charles. (Interim)	B.A., Queen's	Class	1906	1	3	.....	800	.....
	Ketcheson, Blanche. (Interim)	B.A., Tor	Mods. and Hist	1906	....	....	.....	.....	750

Number of Schools, Sex of Teachers, and Percentages.

Collegiate Institutes	42
High Schools	100
Total	142
Increase for the year	2

Teachers.

Gentlemen	513
Ladies	206
Total	719
Increase for the year	30

Percentages.

January, 1907...	Gentlemen,	71.35 ;	Ladies,	28.65
January, 1906...	"	74.2 ;	"	25.8
January, 1905...	"	77 ;	"	23
January, 1904...	"	78.8 ;	"	21.2

Number of Teachers.

Collegiate Institutes.

Principals	42
Assistants	313
Total	355
Increase for the year	16

High Schools.

Principals	100
Assistants	264
Total	364
Increase for the year	14

Grand Total.

Principals	142
Assistants	577
Grand Total	719
Increase for the year	30

Salaries.

Collegiate Institutes.

Highest salary	$3,500
Average " Principals	1,655
" " Assistants	1,108
Average Salary	$1,176
Increase for the year	$51

High Schools.

Highest salary	$2,500
Average " Principals	1,155
" " Assistants	817
Average salary	$910
Increase for the year	$38

Collegiate Institutes and High Schools.

Highest salary	$3,500
Average " Principals	1,303
" " Assistants	975
Average salary	$1,039
Increase for the year	$42
Average salary, Men Assistants	$1,091
" " Women "	762
Increase for the year, Men	$68
" " " Women	39

Universities, etc., of Teachers.

Collegiate Institutes and High Schools.

Toronto	338
Victoria	29
Queen's	138
Trinity	14
McGill	2
McMaster	16
Ottawa	2
Western	1
Manitoba	1
British	1
Interim Certificates	161
Specialists	404
Interim Specialists	98
D. Pæd.	2
B. Pæd.	8
Ph. D.	3
Graduates	543
Non-Graduates	176
Permits	6
Percentage of Graduates	75.52
Percentage of Non-graduates	24.48
Percentage of Specialists and Interim Specialists	69.82
Percentage of Non-specialists	30.18

APPENDIX V.—REPORT OF THE INSPECTOR OF CONTINUATION CLASSES.

HONOURABLE R. A. PYNE, M.D., LL.D.,

Minister of Education, for the Province of Ontario,
Education Department, Toronto, Ontario.

HONOURABLE SIR,—I have the honour to submit herewith my report on the Continuation Classes of the Province of Ontario for the year ending December 31st, 1906.

The appended table of statistics will be found to contain considerable information in reference to the Grade A and Grade B classes not hitherto published.

I have the honour to be,

Sir,

Your obedient servant,

April 18th, 1907.

R. H. COWLEY.

Continuation Classes.

Continuation classes were established in the Province of Ontario in 1896, in response to a persistent demand for a more extended course of studies in the rural schools. Though this demand was sometimes voiced as a complaint against what was termed the inferior education afforded by the public school, it may fairly be considered in some sense a tribute to the efficacy of both public and high schools. Despite its limitations the pubilc school had at least succeeded in creating some general stimulus toward a higher education than it had thus far afforded. The high school, too, had steadily widened its influence until it had come to be accepted as a satisfactory instrument of secondary education. Since 1867 the number of high schools, then weakly attended and more weakly equipped, had increased from 103 to 130 in 1896, while the roll of pupils had increased between four and five hundred per cent. Every one of these high schools, scattered over the entire province, had been a mission-house of better education; every one of the 25,000 pupils then in attendance had been in some degree a witness to the advantage of such education. Also the large army of 16,000 candidates that had been coming up yearly from the elementary schools to the Entrance Examination constituted in itself fairly conclusive evidence that the apirations of the average man were steadily setting toward a better education for his chidren than that hitherto afforded by the public school.

At this point it is perhaps worth noting that, while the extension of the Entrance Examination helped to awaken public interest in the high schools, one of its first effects on the rural schools was to insinuate the idea that this examination was their proper finishing point. This soon resulted in the depletion of the Fifth classes and the consequent lowering of the rural school standard. Though some far-seeing inspectors persistently encouraged Fifth classes, the attendance in these classes gradually diminished from 17 per cent. of the total enrolment in 1867 to 2 per cent. of the enrolment in 1887

The Public School Leaving Examination.

With the introduction of the Public School Leaving Examination in 1892 the Fifth classes began to grow until in 1897 the percentage of attendance was more than double that of 1887. The number of candidates that passed this examination during the course of its existence, from 1892 to 1899 inclusive, was in the order of years as follows:—195, 268, 690, 1,395, 1,826, 2,242, 1,980, 2,825. During these years the attendance in the Fifth classes increased in round numbers from 13,000 to 20,000, though in the same time the total attendance in all the classes of the elementary schools fell from 485,000 to 471,000. Upon the abolition of the Public School Leaving Examination in 1899 a decrease in the number of Fifth class pupils became apparrent, but the percentage of attendance in these classes has not fallen so low as the standard of 1892, owing evidently to the influence of the Continuation Classes which had lately been organized and had in all probability received their first vital impulse from the Public School Leaving Examination.

Waiving the question of the ultimate place that examinations should occupy in an efficient system of public education, the outstanding facts in connection with the High School Entrance Examination, the Public School Leaving Examination and the extension of Continuation Classes seem to suggest very definitely that a formal public test and a formal public recognition of knowledge attained are a material inducement toward prolonged attendance and better education.

The Typical Continuation Class.

The four grades into which Continuation Classes are at present classified represent materially different standards of efficiency. Those known as grades C and D are not as a rule different from the ordinary rural Fifth class except in having a slightly larger attendance. Grade B is distinguished by its larger attendance and by conditions of classification which enable the teacher to devote more of his time to this class than is the case in the average grade C or D. But like these lower grades it is seldom able to carry the pupils beyond the limit of the Lower School course of the high school, and this limit is now recognized by the regulations as the legitimate field of any public school Fifth class. There is, however, another feature of the grade B class which more conspicuously differentiates it from the lower grades. It is not so much a merely local Fifth class. It affords some measure of education to surrounding sections. In 1906 the 51 grade B classes had a roll of 1,232 pupils of whom 983 were resident and 249, or more than one fifth the whole attendance, non-resident. In other words these 51 grade B classes were attended by pupils from 181 school sections, each class serving on the average more than three and a half sections.

The grade A class is the highest and may therefore be taken as the type or objective of the system. Its characteristic features are: (1) a properly qualified teacher; (2) the teacher's whole time devoted to the class; (3) the class consisting entirely of pupils who have passed the Entrance examination or its equivalent; (4) the programme of studies including the work of the Middle School of the high school course; (5) the pupils coming from a number of surrounding sections.

It will readily be seen that the very pith of these characteristics is the fact that the teacher devotes his whole time to the class. Insist upon this and the other essentials are likely to follow in due course in the majority of cases, though these are worth facilitating by special regulations.

Steady Growth of Grade A Classes.

How far the present grade A classes meet these conditions a glance at the facts will reveal. In the first place their comparatively steady growth marks them as the apparent goal of the lower grades. The grades C and D depend largely upon the numbers in their respective localities that pass the Entrance examination from year to year, and this means that they are in a more or less unstable condition. In 1900 there were in all 337 of these classes, rising to their maximum of 432 in 1902 and falling again to their minimum number of 300 in 1906. As for the grade B classes they seem to be chiefly a recruit-

ing ground for grade A. In 1897 there were 51 of these classes reported. In 1899 they attained their maximum of 69 and from that time gradually fell till in December, 1906, there were 51 reported,—the same number as in the year of their origin.

The grade A classes are evidently on a more permanent basis, and their growth has been sufficiently uniform and decisive to indicate that they are supplying a definitely felt need and that in the near future they may fill a place of some influence in the school system. Following are the respective numbers of these classes reported on June 30th of each year from 1897 to 1906 inclusive:—27, 44, 45, 50, 55, 59, 65, 68, 78, 88. In 1897 there were 1,265 pupils in attendance, increasing to 2,200 in 1900, while in June, 1906, there were 2,957 pupils reported in 88 classes of this grade. In December, 1906, the number of grade A classes had grown to 91, while the roll of pupils had increased since midsummer by 35 per cent., showing a total for the calendar year of 3,993.

Number of Sections Represented.

Of this number 2,627 come from the 91 sections in which the classes are located and 1,366 pupils, or more than one-third of the total attendance, come from 569 surrounding sections. Thus the 3,993 pupils represent a total of 660 school sections or an average of more than seven sections for each grade A class.

Probably seven sections per school is a larger number than the ultimate desideratum, as the object of the Continuation Class is not to build up large classes or high schools at a few centres but rather to encourage less pretentious though efficient classes such as may be maintained by a group of four or five average sections. In the meantime the benefits afforded to surrounding sections by the large classes are worthy of all appreciation, but the time may come when it will be desirable to restrain the growth of such classes where their influence is clearly to the effect of preventing the establishment of classes at other suitable centres. For it may be taken for granted that the farther the non-residents have to go the fewer of them will attend, and in such condition one of the main ends of the Continuation Class—that of supplying a measure of better education to every child beyond the reach of the high school—will be frustrated.

Teachers.

The qualifications of the teachers of the grade A classes are well up to the requirements of the Regulations, but owing to the existence of options on the academic courses for teachers' certificates it is not unusual to find teachers in charge of Continuation Classes who have not had the preliminary preparation fitting them to teach all the subjects. Herein lies one of the difficulties at present encountered by the one-teacher Continuation Class. The question of properly improving Continuation Classes must be closely identified with that of the efficient preparation of first class teachers in both scholarship and practice.

Of the 91 principals of grade A classes 83 hold first class certificates, 7 second class, and 1 a temporary certificate. There are 4 of the grade A schools with each a staff of 3 teachers in Continuation work, 25 with two teachers, and 62 with 1 teacher. Of the 144 teachers employed in the grade A classes, 117 devote their whole time and 27 part of their time to Continuation work, making an average of about 131 teachers giving whole time.

Pupils and Classification.

Of the 3,993 pupils enrolled in the grade A classes, 3,666 or over 90 per cent. had passed the Entrance examination; 1,614 are enrolled in the first year, 1,143 in the second year, 1,214 in the third, and 22 in the fourth or the Upper School, this work being outside the ordinary scope and receiving attention in only 4 of the larger classes. About 30 per cent. of the pupils were in the work of the Middle School, about 69 per cent. in the Lower School and considerably less than 1 per cent. in the Upper School. In the High Schools 63 per cent. were in the Lower School, 28 per cent. in Middle School and 9 per cent. in Upper School.

As to the source of the pupils in grade A classes, 1,747 or 44 per cent. were drawn from the farm, 707 or 18 per cent. from the homes of the mercantile classes, 240 or 6 per cent. from the professions, and 1,299 or 32 per cent. from various other occupations.

On the other hand of the 876 pupils who left school during the year for various destinations, the farm gained 79 or only 9 per cent; 183 or 21 per cent entered mercantile life; 89 or 10 per cent went to the professions; and 525 or 60 per cent took up various other occupations.

Efficiency of the Grade A Classes.

While the efficiency of any individual school for the time being may be determined by careful inspection, the success of a system or institution is a matter of wider relations and can be safely estimated only by taking into account certain additional features that become apparent in a general view. In the case of the classes in question the general features are on the whole of a re-assuring nature. Among these may be mentioned increase in the number of classes, growth of attendance, voluntary grants, willingness to pay fees, improvement of equipment, success at examinations etc. The number of the classes and the increased attendance have already been definitely referred to. The local expenditure is no less important an indication of public approval and therefore of general efficiency.

Collection of Fees.

Though the maximum fee in few cases exceeds $1 per month even this sum amounts to more than the average public school tax per pupil, and the fact that it is willingly paid is in itself a tribute to the efficiency of the class. The total fees contributed in 1906 amounted to nearly $12,000 or about $127 per class.

In 43 classes resident pupils are admitted free, while 23 classes are also free to non-residents. In 31 classes both pay the same fee. Having regard to the fact that a considerable proportion of the maintenance of these classes is derived from sources other than the section, it might be fair to impose a uniform fee on all the pupils alike or to apportion a part of the annual government grant on the basis of attendance of non-residents, it being assumed that those classes encouraging such attendance are in that respect accomplishing an important part of their mission.

Voluntary Grants.

A more striking evidence of public approval is the growing tendency of county councils to pay a voluntary grant over and above the considerable statutory grant they are at present required to give in duplication of the government grant. In at least fifteen counties such voluntary contributi appear to have been made in 1906. These extra grants usually range from $75 to $150 per teacher. Last year 37 out of the 91 grade A classes and 13 out of the 51 grade B classes benefited by such spontaneous assistance, the total sum thus given being $7,124.75 or nearly 40 per cent. in excess of the statutory requirement.

Accommodation and Equipment.

The past year has been one of good progress in respect of accommodation and equipment. Where grade A classes have been in existence for a few years it is not uncommon to find that Boards have enlarged their school buildings to provide permanent accommodation. Recently some fine wings have been erected, including not only class rooms but modern appointed laboratories for the use of the classes in science

Of the total value of the equipment in December, 1906, $17,933—$4,913 represents the value of additions during the year, the average equipment for each grade A class now standing at $197. This consists mainly of apparatus for physics and chemistry. It must still be admitted that in too many of these classes the supply of apparatus is inadequate for the work in hand, and it would evidently be in the interests of efficiency to have respect to this matter in future distributions of the grants.

The school library is another very important part of the equipment, but as the necessities of the course have not called attention to it so obviously as to the need for scientific apparatus, it has been generally overlooked, there being only eight or ten schools with good libraries, while over half the grade A classes are substantially without libraries.

Considering the paramount importance of English Literature and the habit of reading along right lines as conspicuous features of a good secondary course, it would surely not be going too far to insist upon a reasonably well stocked library as an indispensable part of the equipment of every grade A Continuation Class. The special catalogue of books for this purpose recently issued by the Education Department will be a suggestive guide to School Boards and teachers.

Results of Examinations.

In 1904, the last year for which such statistics have been published the high schools sent up, approximately, 2,450 candidates to the Junior Leaving examination, passing 1,230 or 50 per cent. of whom 27 took honours. Last year the grade A Continuation Classes sent up 396 candidates to the same examination, passing 193 or 49 per cent. of whom 52 took honours. In each case the number of successful candidates from high school and continuation class represented exactly the same percentage, 16 per cent, of the total number of pupils enrolled in the Middle School of each institution.

While success at examinations cannot be urged as an adequate measure of the work of a school, failure at examinations may fairly be regarded as some evidence of weakness. The absence of such failure in the case of the Continuation Class and the parallel between it and the High Schools, which have long since won the confidence of the people, affords no ground to conclude that the Continuation classes are not doing substantial work. The better equipment and accommodation of the high schools; the enthusiasm and stimulus of numbers; the thoroughness of the special teacher and the intensive presentation of his subject; the broadening influence of contact with the minds of several such teachers—have all been properly urged as characteristic advantages of the up-to-date high school.

Comparison with High Schools.

On the other hand there are those who maintain that in excess of these virtues of the high school are occasionally to be found certain inherent and far-reaching weaknesses. It is claimed that the specialist is liable to lose sight of the personality and interests of the pupil in the subject of study; that departmental teaching prevents due correlation and sometimes results in isolated and narrow teaching; that the conditions of urban life are more distracting to the mind of the student than are the quiet surroundings of the average Continuation Class: that in the latter case the pupil enjoys the signal advantage of pursuing his studies while still under the parental roof; that the interest, influence and constant supervision of the same teacher which is possible in the Continuation Class makes very definitely for the better development of the pupil; that the extent to which he is necessarily thrown on his own resources is in happy contrast with the over-teaching of the high school.

While some of these comparisons are often pressed too far, it is perhaps quite safe to assert that the precise value of specialism in the secondary school is a subject that has not yet been wholly transferred from the region of the debatable. In any event there is an admitted antithesis between the high school and the Continuation Class in this respect,—the high school teacher teaching a limited number of subjects to a considerable number of pupils, the Continuation Class master teaching a considerable number of subjects to a limited number of pupils;—in other words, the former specializes in studies, the latter specializes in students.

In their general circumstances the grade A Continuation Classes to-day are relatively in at least as promising a condition as were the high schools forty years ago when in a similar state of infancy. Having regard to the splendid growth and present efficiency of the high schools, the following comparative statistics suggest ground for favorable anticipations in respect to the future of the Continuation classes:—

	1867. High Schools.	1907. Grade A Continuation Classes.
Total number of schools	103	91
Total number of teachers	159	131 (approx)
Number of teachers per school	1.5	1.4
Number of pupils enrolled	5,696	3,993
Average number of pupils per school	55	44
Average number of pupils per teacher	36	30
Total fees for the year	$15,605	$11,700
Average total fees per school	$152	$128
Average fees per pupil	$2.74	$2.93
Total salaries paid teachers	$94,820	$83,905
Average salary per teacher	$596	$645
Percentage regularity of attendance	55	67 (approx)
Amount of annual Government grant	$54,562	$18,605 (1906)
Amount of annual Gov't grant per unit avge. attendance	$17.38	$8.16
Number of schools charging fees	67	68
Number of schools free	36	23

Perhaps the most striking feature of this comparison is the disparity in the amounts and rates per capita of the Government grants paid to encourage high schools and continuation classes respectively. Considering the fact that the latter classes are intended to afford to the rural districts as good an education as that long since supplied by the high schools to the cities and towns, it would appear to be just and expedient that an equally liberal basis of Government grants should now be adopted toward continuation classes, since it is in the initial stages of an institution that the greatest difficulties are usually encountered and timely assistance is of most effect in securing permanency and progress.

The Continuation Class and the Farm.

It has already been stated that of the 3,993 pupils enrolled in the grade A classes, 1,747 or 44 per cent. come from farm homes, and that of the 876 pupils who left these classes during the year only 79 pupils or 9 per cent. returned to the farms. Assuming that the number who left during the year includes a due proportion of pupils from the farm, the figures point to the inference that out of every 5 pupils from the farm who attend these classes only one returns to the farm. This would indicate that the education now being given in the continuation classes is not a whit more encouraging to the pursuit of agriculture than is that of the high school or the collegiate institute.

It is of course reasonable to expect that country boys will be drawn in large numbers into the many new and constructive occupations that are springing up from time to time owing to the steady progress of science and invention. Owing to their home training and the lessons learned from their daily environment they are specially fitted for success in such pursuits. But making allowance for these productive industries as an appropriate destination for country boys, and having regard also to the great importance of agriculture, it is hard to avoid the conclusion that the rural districts pay to the urban centres too great and constant a toll of their best blood.

If agriculture is of fundamental importance; if it is compatible with the dignity and development of the individual; if it can be promoted by technical instruction; if technical education may properly be introduced on the plane of the secondary school; if secondary instruction may fitly be shaped

to the life-work of the people;—and to-day these are all commonly accepted hypotheses,—it may soon become advisable to consider to what extent the curriculum of the continuation class should be further modified to encourage the pursuits of the farm and promote the interests of the farm home.

At present the obligatory course of study is not even neutral in this respect. It the rather inclines to draw youth away from the farm and rural life. Not only are examinations for matriculation into the university and for entrance to teaching distinctly provided for, but through long force of habit and circumstances these are made a special end in nearly all the secondary schools of the Province. To some extent, too, special attention is given to commercial subjects. While it may be claimed with some propriety that the studies tending in these directions are also of value in the education of the farmer, there is nothing in the required courses to incline the student to think definitely or even to think at all of farming as a desirable life-work; on the other hand there is much in the definite aim of the school and the long usage of the system to actually cause him to gravitate away from the farm.

Undeniably our secondary schools have for many years gone farther than providing a course for general culture;—they have given the student a distinct bias toward the professions and intentionally also toward mercantile pursuits. The very fact that the graduates of our rural schools have been forced to repair to the towns and the cities to obtain their secondary education has of itself constituted a longstanding, serious and unadvisable discrimination against the progressive development of rural life.

In this relation we have come to the parting of the ways. Secondary education must be limited to the needs of general culture without bias toward any pursuit, or agriculture—our greatest productive industry—must receive its due share of encouragement through the technical and scientific courses of our secondary schools. There can be no escape from the logic of this position. To adopt the latter alternative would be to act in harmony with the recognized tendency of our school system and the general trend of educational opinion.

All this would involve some change in the curriculum of rural continuation classes as also in the courses of those who are to become teachers in the rural schools. The outstanding features of such courses would be:—(1) A fixed curriculum of general cultural value for all teachers, (2) A special course in agriculture for male teachers, (3) A special course in the economics of the farm home for female teachers. A continuation class with a staff of one male and one female teacher so qualified would be competent to conduct a general course of as high a standard as that now prescribed, taking up at the same time such phases of practical work as would awaken a deep and intelligent interest in country life. The crowning fruit of such a system would be the eventual production of a rural population well informed as to the advantages of education and therefore intent on maintaining efficient rural schools.

Such work on the part of continuation classes is requisite to bridge the gulf between the rural school and the Ontario Agricultural College. It is requisite to a balance in the system of secondary schools which now afford a convenient avenue to the colleges of arts, medicine, law, theology, dentistry, pharmacy,—in fact to almost every higher school of learning and practice in the land except to the agricultural college, which alone is supposed to be the farmer's university, but which is really so little patronized by the country boy with a secondary education that it is forced to devote a considerable share of its energy to elementary non-technical work with

which none of the other colleges are encumbered, and which ought to be done in the Fifth classes, Continuation classes and High Schools of the Province. A proper co-ordination of work between the Ontario Agricultural College and the Continuation classes must have the ultimate effect of inducing hundreds of farmers' sons and daughters to attend the agricultural and domestic science courses of the provincial institution which, relieved of the elementary work that now impedes it, would become more widely effective in its special mission to the tiller of the soil.

Recommendations.

Having regard to the present condition and the future efficiency of Continuation classes in respect both to their own immediate sphere and the school system as a whole, the following recommendations are submitted:—

(1) That the present system of grading Continuation classes be abolished and that there be henceforth but one type of Continuation class or school identified by the following characteristics:—

(*a*) At least one properly qualified teacher devoting whole time to pupils who have passed the High School entrance examination or its equivalent.

(*b*) The course of work extending, if required, as far as the Middle school of the High School inclusive.

(2) That the present grade B classes be recognized, if at all, for a limited period only, upon the expiry of which those, if any, that have not risen to the standard of Continuation Schools proper might henceforth be ranked as Fifth classes.

(3) That the grades C and D classes be ranked in future as Fifth classes and that the grants to all Fifth classes of reasonable size be paid in proportion to their merit, on some such basis as average or aggregate attendance, an average annual attendance of three pupils being the minimum recognized, it being first assured that the qualifications of the teacher and other conditions are satisfactory.

(4) That the work of Fifth classes be confined to a course of two years. the extent of the work in each subject being limited to the range of the Lower School of the High School.

(5) That an examination under the auspices of the Education Department be established at the end of the Fifth class course, such examination having the standing of a senior entrance examination, the certificate admitting the holder to the Middle School of the Continuation School and serving also as a district certificate where such is necessary.

(6) That a new basis of paying grants be adopted, with special reference to such matters as the salary of the teacher, the accommodation, the equipment and the attendance.

(7) That where fees are charged the rate shall be uniform for resident and non-resident pupils alike, and shall not exceed $1 per month.

(8) That when the time arrives for modification of the course of studies special consideration shall be given to such practical work as shall best contribute to the attractiveness and completeness of rural life.

(9) That in order to facilitate the improvement of accommodation and equipment of Continuation Schools the Government grant for the current year be made at least $40,000.

CONTINUATION CLASSES—GRADE A.

Statistics for the year

Inspectorate.	Name of School.		Teachers.
	Post Office.	School Section.	Names and degrees of teachers giving whole or part of time to Continuation Class.
1 Algoma	Bruce Mines	Bruce Mines, Town	W. J. Osborne
			Annie K. McGregor, B.A.
2 Brant	St. George	8 South Dumfries	A. E Green
	"	"	Miss W. Dengate
3 Bruce W.	Southampton	Southampton, Town	D. Ross
	"	" "	Isabella Dobbie
4 "	Ripley	10 Huron	Dougald Graham
5 "	Paisley	Paisley Village	John T. Royden
	"	"	George Brown Bell
6 "	Teeswater	Teeswater Village	Mr. Lawr
	"	"	Miss Nellie Martin
7 Carleton	Kinburn	5 Fitzroy	Katharine Caesar
8 "	Fitzoy Harbour	8 Fitzroy	Lulu E. Mulloy
	"	"	Mary D. Harkness
9 "	Kenmore	15 Osgoode	Ida Norton
10 "	Metcalfe	11 Osgoode	Miss M. Maud Norton
	"	"	Miss M. E. Norton
11 "	Cummings Bridge	9 Gloucester	Miss Edith Adams
12 "	Bowesville	5 Gloucester	Miss Edith E. Hughes
13 "	Kars	3 North Gower	Edith M. Stewart
	"	"	Laura Whitney
14 "	Richmond West	Richmond Village	H. L. MacDougall
15 "	North Gower	6 North Gower	Emma Craig
16 "	Munster	5 Goulburn	Bertha Mabel Gurney
17 "	Ashton	7 Goulburn	H. May Peregrine
18 "	Ottawa East	Ottawa East, Village	Muriel C. Payne
19 Dufferin	Shelburne	Shelburne Village	T. E. Langford, M.A.
	"	" "	Nellie DeCou B.A.
20 "	Grand Valley	Grand Valley Village	A. M. Warner
21 Dundas	Winchester	Winchester Village	B. C. Taggart
22 "	Morewood	12 Winchester	Horatio Loucks
23 "	Chesterville	Chesterville Village	Geo. H. Steer
24 Durham	Millbrook	Millbrook Village	D. Hampton
25 Elgin	Rodney	5 Aldborough	J. E. Marcellus
26 "	West Lorne	6 "	Alex. G. Leitch
27 Essex, S.	Kingsville	Kingsville, Town	Fred. J. Voaden
28 "	Comber	4 Tilbury West	Leona McCutcheon, B.A.
	"	"	Dorothea L. Scott
29 "	Amherstburg	Amherstburg, Town	Gilbert Summers
	"	"	Retta M. Hicks
30 "	Harrow	9 S. Colchester	Miss Stella Mott
31 Glengarry	Maxville	Maxville, Village	C. H. Cecil Moyer
32 Grey, S.	Hanover	Hanover, Town	Jas. A. Magee
33 "	Durham	Durham, Town	Thos. Allan
	"	"	Lena M. Forfar, B.A.
	"	"	Florence McKerracher
34 Haliburton, etc	Huntsville	Huntsville, Town	A. C. Bernath
35 Haldimand	Jarvis	10 Walpole	D. T. Aiken
36 Halton	Acton	Acton, Village	W. H. Stewart
			Jessie C. McKinnon

CONTINUATION CLASSES—GRADE A.—Continued.

ending December 31st, 1906.

Teachers.				Attendance and classification of pupils.													
How many giving whole time?	How many giving part time?	Professional certificate.	Annual rate of salary.	Total pupils enrolled.	Number of boys.	Number of girls.	Average age Dec. 31, 1906.	Number who passed Entrance exam.	Number of days school open.	Aggregate attendance 1906.	Number of pupils from section.	Number from other sections.	How many other sections.	Number in 1st year (Lower school.)	Number in 2nd year (Lower school.)	Number in 3rd year (Middle school.)	Number in 4th year (Upper School.)
			$														
1	1	1st	800	41	16	25	16	41	198	4,449	38	3	3	12	15	14	
	1	1st	500														
2	1	1st	600	35	20	15	15	33	197	4,740	21	14	5	14	11	10	
	1	1st	450														
3	1	1st	750	25	10	15	15	25	197	2,430	24	1	1	15	10		
	1	1st	425														
4	1	1st	600	23	8	15	14	23	208	2,776	20	3	3	6	10	7	
5	1	1st	800	61	19	42	15	58	198	7,398	43	18	9	29	10	22	
	1	1st	600														
6	1	1st	650	51	28	23	15	12	199	6,688	28	23	9	19	20	12	
	1	1st	425														
7	1	1st	500	27	14	13	14	27	202	3,096	19	8	4	10	15	2	
8	1	1st	550	35	17	18	16	3	198	4,302	18	17	4	16	13	6	
	1	1st	400														
9	1	1st	500	19	9	10	15	19	182	2,238	12	7	2	7	4	8	
10	1	1st	500	51	24	27	15	50	172	6,188	27	24	12	25	12	14	
	1	1st	450														
11	1	1st	500	12	4	8	14	11	84	1,454	9	3	2	9	2	1	
12	1	1st	500	12	4	8	18	7	83	707	10	2	1	11		1	
13	1	1st	500	32	15	17	16	30	198	3,020	14	18	13	18	7	7	
	1	1st	450														
14	1	1st	500	38	18	20	14	37	190	4,156	32	6	3	22	12	4	
15	1	1st	500	26	11	15	15	26	173	2,791	15	11	4	11	10	5	
16	1	1st	400	14	7	7	14	13	196	1,996	5	9	3	5	9		
17	1	1st	500	24	11	13	15		195	2,212	11	13	4	12	4	8	
18	1	1st	425	30	14	16	14	29	196	2,792	19	11	5	18	7	5	
19	1	1st	825	68	25	43	15	67	195	5,499	37	31	16	23	21	24	
	1	1st	500														
20	1	1st	700	42	18	24	14	40	191	3,353	26	16	6	22	10	10	
21	1	1st	700	54	13	41	15	54	199	7,203	44	10	4	21	14	19	
22	1	1st	750	42	18	24	15	42	208	5,866	20	22	8	6	7	29	
23	1	1st	650	43	17	26	15	43	198	4,779	35	8	4	12	10	21	
24	1	2nd	600	48	21	27	15	48	196	4,862	33	15	9	24		24	
25	1	1st	575	33	12	21	16	33	205	3,884	29	4	3	19	12	2	
26	1	1st	600	39	20	19	13	37	204	4,507	37	2	2	21	18		
27	1	1st	800	26	12	14	14	26	191	3,653	22	4	3	26			
28	1	1st	550	32	9	23	16	32	194	3,763	23	9	3	12	6	14	
	1	1st	450														
29	1	1st	800	39	16	23	16	39	190	2,759	39			24	5	10	
	1	1st	400														
30	1	1st	500	18	5	13	15	17	189	2,401	14	4	2	14	4		
31	1	1st	600	40	19	21	15	38	195	4,277	23	17	8	22	10	8	
32	1	1st	825	52	17	35	14	51	191	7,394	39	13	9	20	18	14	
33	1	1st	800	111	37	74	16	111	194	13,142	60	51	25	30	29	52	
	1	1st	575														
	1	1st	475														
34	1	1st	900	33	9	24	14	30	198	4,412	30	3	1	24	9		
35	1	1st	700	42	17	25	14	42	192	4,541	32	10	3	13	29		
36	1	1st	700	41	13	28	15	41	193	4,763	33	8	4	23	10	8	
	1	1st	450														

CONTINUATION CLASSES—GRADE A.—Continued.

Statistics for the year ending

Number of pupils in

	English Grammar.	English Composition.	English Literature.	Canadian History.	British History.	Ancient History.	Mediæval History.	Modern History	Geography.
1	41	41	41	41	41	14	.....	.....	14
2	35	35	35	35	35	21	35	35	35
3	25	25	25	25	25	.....	.....	.....	25
4	23	23	23	23	23	17	23	23	23
5	61	61	61	61	61	22	.....	.....	61
6	51	51	50	50	51	32	.....	.....	50
7	27	27	27	10	27	2	.....	.....	25
8	35	35	35	35	35	35	.....	.....	35
9	19	19	19	19	19	12	.....	.....	19
10	51	51	51	51	51	26	.....	.....	51
11	12	12	12	12	12	1	.....	12	12
12	12	12	12	12	12	1	.....	12	12
13	32	32	32	32	32	7	.....	32	32
14	38	38	38	38	38	11	.....	.....	38
15	26	26	26	26	26	5	.....	.....	26
16	14	14	14	14	14	9	.....	.....	14
17	16	16	16	16	16	5	.....	.....	16
18	30	30	30	16	30	12	.....	.....	30
19	68	68	68	68	68	24	.....	68	68
20	42	42	42	42	42	10	.....	.....	42
21	54	54	54	53	53	17	54	54	54
22	42	42	42	42	42	.....	.....	.....	42
23	43	43	43	43	43	31	.....	.....	43
24	48	48	48	48	48	24	.....	.....	42
25	33	33	33	33	33	2	.....	33	33
26	39	39	39	39	39	.....	.....	.....	39
27	26	26	26	26	26	.....	.....	.....	26
28	32	32	32	19	32	17	.....	.....	32
29	39	39	35	35	35	10	.....	10	35
30	18	18	18	18	18	.....	.....	18	18
31	40	40	40	40	40	8	.....	.....	38
32	52	52	52	52	52	38	.....	.....	52
33	111	111	111	111	111	52	.....	.....	111
34	33	33	33	33	33	.....	.....	.....	33
35	42	42	42	42	42	.....	.....	.....	42
36	30	30	30	30	30	12	.....	.....	11

CONTINUATION CLASSES—GRADE A.—Continued.

December 31st, 1906.—*Continued.*

the various subjects.

	Reading.	Arithmetic.	Algebra.	Geometry.	Trigonometry.	French.	German.	Latin.	Greek.	Zoology	Botany.
1	27	41	41	41	.....	.....	.....	38	.....	.....	12
2	35	35	35	35	.....	28	.....	33	.....	.....	14
3	25	25	25	25	.....	8	8	11	.....	.....	25
4	23	23	23	23	.....	17	.....	23	.....	16	16
5	39	61	61	61	.....	22	.....	43	.....	39	39
6	50	51	51	50	.....	38	.....	44	.....	.....	31
7	25	27	27	27	.....	27	.....	27	.....	25	25
8	29	35	35	35	.....	10	.....	16	.....	19	19
9	19	19	19	19	.....	12	.....	19	.....	7	7
10	51	51	51	51	.....	41	.....	45	.....	25	25
11	12	12	12	12	.....	.....	.....	12	.....	11	11
15	11	12	12	12	.....	.....	.....	11	.....	.....	11
13	32	32	32	32	.....	7	7	32	.....	.....	32
14	38	38	38	38	.....	.....	.....	38	.....	38	38
15	26	26	26	26	.....	20	.....	26	.....	26	26
16	14	14	14	14	.....	.....	.....	14	.....	14	14
17	16	16	16	16	.....	11	.....	13	.....	.....	11
18	30	30	30	30	.....	30	.....	30	.....	.....	16
19	44	68	68	68	.....	25	.....	47	.....	44	44
20	42	42	42	42	.....	.....	.....	42	.....	.....	32
21	54	54	53	53	.....	26	.....	22	.....	35	35
22	42	42	42	42	.....	.....	.....	.....	.....	42	42
23	43	43	43	43	.....	18	.....	43	.....	22	22
24	48	48	48	48	.....	40	.....	22	.....	.....	24
25	33	33	33	33	.....	.....	.....	.....	.....	33	.....
26	39	39	39	39	.....	.....	.....	36	.....	39	39
27	26	26	26	26	.....	.....	.....	25	.....	.....	26
28	19	32	32	32	.....	22	.....	22	.....	11	19
29	35	39	31	35	.....	5	.....	29	.....	25	25
30	18	18	18	18	.....	.....	.....	12	.....	12	12
31	40	40	40	40	.....	19	.....	40	.....	.....	.....
32	52	52	52	32	.....	.....	41	42	.....	.....	38
33	59	111	111	111	.....	59	.....	59	.....	.....	59
34	33	33	33	33	.....	.....	.....	.....	.....	.....	33
35	42	42	42	42	.....	15	.....	35	.....	42	42
36	17	30	30	30	.....	23	.....	21	.....	.....	17

CONTINUATION CLASSES—GRADE A.—Continued.

Statistics for the year ending

Number of pupils in the various

	Chemistry.	Physics.	Mineralogy.	Writing.	Book-keeping.	Stenography.	Typewriting.	Art.	Physical Education.	Special Commercial Course.	Special Manual Training Course.
1	14	29	.....	12	12	.....	.....	26	.....	.....	.....
2	21	35	.....	.....	14	.....	.....	14	.....	.....	.....
3	.....	25	.....	25	25	19	19	25	.....	19	.....
4	17	23	.....	16	16	.....	.....	16	23	16	.....
5	61	61	.....	39	39	.....	.....	39	.....	.....	.....
6	17	17	.....	19	38	11	.....	39	.....	.....	.....
7	2	27	.....	25	25	.....	.....	25	.....	.....	.....
8	35	35	.....	29	29	.....	.....	29	35	.....	.....
9	12	19	.....	9	9	.....	.....	9	.....	.....	.....
10	40	51	.....	25	25	.....	.....	25	.....	.....	.....
11	3	12	.....	9	12	.....	.....	11	.....	.....	.....
12	12	12	.....	11	11	.....	.....	11	.....	.....	.....
13	13	32	.....	14	24	.....	.....	32	.....	.....	.....
14	38	38	.....	38	24	.....	.....	22	.....	.....	.....
15	26	26	.....	26	21	.....	.....	21	.....	.....	.....
16	14	14	.....	.....	14	.....	.....	14	.....	.....	.....
17	5	16	.....	.....	8	.....	.....	.....	.....	.....	.....
18	21	21	.....	30	29	.....	.....	30	.....	.....	.....
19	68	68	.....	35	35	.....	.....	35	68	.....	.....
20	42	42	.....	22	22	.....	.....	22	.....	.....	.....
21	33	54	54	33	33	.....	.....	33	.....	.....	.....
22	42	42	.....	13	13	.....	.....	24	.....	.....	.....
23	43	43	.....	.....	12	.....	.....	22	.....	.....	.....
24	11	48	.....	40	31	.....	.....	31	.....	.....	.....
25	7	33	.....	33	10	.....	.....	33	33	.....	.....
26	39	39	.....	21	39	.....	.....	39	.....	.....	.....
27	.....	26	.....	26	26	.....	.....	26	.....	.....	.....
28	17	32	.....	19	19	.....	.....	19	.....	.....	.....
29	10	35	.....	29	29	4	4	.....	.....	4	.....
30	.....	12	.....	18	18	.....	.....	18	.....	.....	.....
31	8	6	.....	40	38	.....	.....	38	.....	.....	.....
32	32	32	.....	52	35	.....	.....	20	.....	.....	.....
33	111	111	.....	30	30	.....	.....	30	.....	.....	.....
34	33	33	.....	33	33	.....	.....	33	.....	.....	.....
35	42	42	.....	42	42	.....	.....	42	.....	.....	.....
36	30	30	.....	17	17	.....	.....	17	.....	.....	.....

CONTINUATION CLASSES.—GRADE A.—Continued.

December 31st, 1906.—*Continued.*

	subjects.—*Continued.*				Examination results.											
	Special Household Science.	Special Arithmetic and Eng. Grammar.	Special Art Course.	Special Agricultural Course.	Candidates for District Certificates.	Number who passed.	Candidates for Jr. teachers.	Number who passed.	Number obtaining honors.	Candidates for Sr. teachers.	Number who passed.	Number obtaining honors.	Candidates for Jr. matriculation.	Number who passed.	Number obtaining training honors.	Candidates for Sr. Matriculation.
1					2		1	1								
2													2	1		
3																
4		17	16				3	1					3	1		
5							9	6	4				6	4	2	
6							7	2					4	3		
7																
8							1	1								
9																
10							10	5	2				5	3		
11																
12																
13							5	1	1				1	1		
14							4	2								
15																
16					8	8										
17													2	2		
18																
19		20					13	3					5	2		
20																
21							5	1								
22		14					9	7	1							
23							7	3					1			
24							7	1					5	3		
25		2					7	4								
26																
27																
28		17					12	5								
29		4					3	1					1			
30																
31		8	6		8	5										
32							3	2					1	1		
33							20	9	2				7	2		
34					6	6										
35		42														
36		11					4	4					2	2		

CONTINUATION CLASSES—GRADE A.—Continued.

Statistics for the year ending

	Number who passed.	Number obtaining honors.	Destination of pupils.						Occupation of parents					Value of				
			Mercantile life.	Agriculture.	Law, medicine or the church.	Teaching.	Other professions.	Other occupations.	Commerce.	Agriculture.	Mechanical occupations.	Professions.	Other callings.	Maps, globes, etc.	Scientific apparatus.	Library.	Models for drawing.	Physical education.
														$ c.	$ c.	$ c.	$ c.	$ c.
1			5		1	1			7	18	6	2	8	15 00	220 00	50 00		
2				1			1	3	5	16	8	1	5		169 00	56 00		
3			1	1				11	9	2	6		8				10 00	
4			1		2			4		12	1	2	8	35 00	60 00	20 00	5 00	5 00
5			1		2	6		2	17	22	3	5	14		350 00			
6			6		1			5	11	24	10	2	4	25 00	150 00	25 00	15 00	
7				1					2	24	1				36 00			
8			2	1			1		6	4	21	3	2	5	8 00	107 00	4 00		
9			1					1			10	7	1	1		46 00			
10			4	2		3	6	1	7	27	9	2	6	25 00	135 00	75 00		
11									2		10			2		85 00		
12									2		12				80 00	50 00		
13			3	1		1	1	18		21	2		9		152 00	38 00		
14			1			2			4	27	3	4			100 00			
15									5	17	4				75 00			
16										13	1				26 00	19 00		
17				3						20	3	1			55 00			
18			1						7	6	6	3	4	11	25 00			
19			4	5	1	9		10	27	27	6	2	6	72 00	378 00	120 00	10 00	
20			4	3				5	11	20	3		8	22 00	200 00	43 00	4 00	
21			5			1			13	17	8	2	14	25 00	80 00	5 00		
22			1	1		6		1	3	30	7		2	10 00	300 00	25 00		
23			3	2		3			7	12	13	4	7	40 00	132 00	30 00		
24			5	1		1	1	12	13	26	6	1	2	36 00	96 00	8 00	3 00	
25				1		2	4		6	18		1	8	40 00	125 00	80 00		
26									9	4	11	3	2	19				
27			2	1	2	7			7	9	3	3	4	60 00	80 00	75 00		
28				1		6	1	2	6	21	3		2	25 00	200 00	20 00		
29			2	1					7	3	10	6	13					
30									2	4	7	4	2	1	60 00			
31			2						12	17	4	2	5	40 00	60 00	2 00		
32			3		1	2		1	17	15	13	4	3	16 00	150 00	35 00	1 00	
33			1	1	1	7	2	3	7	59	7	8	30	10 00	215 00			
34			2					1	11	4	7	2	9	25 00	100 00	25 00	2 00	
35			2	1				5	2	18	7	10	5	80 00	120 00		5 00	
36			1			5	1	1	5	12	2	2	20		75 00			

CONTINUATION CLASSES—GRADE A.—Continued.

December 31st, 1906.—*Continued.*

	equipment.				Fees.			Grants.		
	Typewriters.	Museum, aquarium, collections.	Total value.	Value of additions, 1906.	Monthly fee of pupils of section.	Monthly fee other pupils.	Total fees for year.	Amount of Legislative grant.	Amount of statutory county grant.	Amount of special county grant.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1	.....	.....	285 00	200 00	.....	1 00	15 00	300 00	.....	.....
2	.....	.....	225 00	101 00	.....	25	21 00	150 00	150 00	.....
3	105 00	.....	115 00	.....	80	80	78 00	150 00	150 00	100 00
4	.....	.....	125 00	.....	.....	.....	.....	150 00	150 00	100 00
5	.....	.....	350 00	73 00	L.S. 50 U. S. 25	L.S. 1 00 U.S. 1 25	326 50	275 00	275 00	100 00
6	.....	.....	215 00	75 00	50, 75, $1	50, 75, $1	219 75	150 00	150 00	200 00
7	.....	.....	36 00	16 00	.....	.....	.....	150 00	150 00	200 00
8	.....	.....	119 00	25 00	50	50	87 25	150 00	150 00	350 00
9	.....	.....	46 00	46 00	1 00	1 00	134 00	93 75	93 75	306 00
10	.....	.....	235 00	40 00	.....	1 00	80 00	225 00	225 00	425 00
11	.....	.....	85 00	27 00	.....	.....	.....	37 50	37 50	252 00
12	.....	.....	130 00	.....	.....	.....	.....	.....	.....	170 00
13	.....	.....	190 00	102 00	.....	.....	.....	225 00	225 00	195 00
14	.....	.....	100 00	30 00	50	1 00	86 25	150 00	150 00	200 00
15	.....	.....	75 00	.....	.....	.....	.....	86 25	86 25	213 75
16	.....	.....	45 00	.....	.....	.....	.....	150 00	150 00	200 00
17	.....	.....	55 00	.....	.....	.....	.....	150 00	150 00	200 00
18	.....	.....	25 00	.....	50	50	75 75	75 00	75 00	275 00
19	.....	.....	580 00	199 00	M'dle Sc'l 1 00	1 00	217 00	300 00	300 00	200 00
20	.....	.....	269 00	106 00	.....	.....	.....	150 00	150 00	95 00
21	.....	.....	110 00	20 00	.....	1 00	30 75	150 00	150 00	225 00
22	.....	.....	335 00	90 00	1 10	1 10	354 00	150 00	150 00	75 00
23	.....	.....	202 00	75 00	1 00	1 00	140 00	150 00	150 00	75 00
24	.....	.....	143 00	27 00	.....	.....	.....	150 00	150 00	50 00
25	.....	.....	245 00	25 00	.....	.....	.....	150 00	150 00	.....
26	.....	.....	.....	.....	.....	.....	.....	150 00	150 00	.....
27	.....	.....	215 00	25 00	.....	.....	.....	75 00	75 00	100 00
28	.....	.....	245 00	160 00	70	70	244 30	300 00	300 00	100 00
29	110 00	.....	110 00	.....	1 00	1 00	.....	300 00	300 00	.....
30	.....	.....	60 00	.....	.....	.....	.....	37 50	37 50	.....
31	.....	.....	102 00	80 00	50	1 00	209 00	150 00	150 00	.....
32	.....	.....	202 00	135 00	1 00	75, 1.00	161 25	150 00	150 00	...
33	.....	.....	225 00	125 00	50, 75, $1	1 00	605 00	450 00	450 00	.....
34	.....	.....	152 00	100 00	.....	75	13 50	300 00	300 00	....
35	.....	.....	205 00	100 00	.....	45	14 60	150 00	150 00	....
36	.....	.....	75 00	25 00	50	70	153 50	300 00	300 00	.....

CONTINUATION CLASSES—GRADE A.—Continued.

Statistics for the year

Inspectorate.	Name of School.		Teachers.
	Post Office.	School Section.	Names and degrees of teachers giving whole or part of time to 31st Continuation Class.
37 Halton.—*Con*	Burlington	Burlington Village	David Hicks, B.A.
	"	"	Garnette Freeman
38 "	Milton	Milton, Town	W. F. Inman
	"	"	A. Evelyn Hockey
39 Hastings, S.	Tweed	Tweed, Village	V. K. Greer
40 Huron, E.	Brussels	Brussels Village	J. H. Cameron
	"	"	M. Fessenden, B.A.
41 "	Blyth	Blyth Village	John Hartley
	"	"	Olivetta Brigham
42 Huron, W.	Exeter	Exeter Village	L. C. Fleming
	"	"	Stella L. Gregory
	"	"	Agnes Johnston
43 Kent, E.	Blenheim	Blenheim, Town	A. A. Merritt
	"	"	Bessie McCamus
44 "	Thamesville	Thamesville Village	J. G. Cameron
	"	"	Myrtle McCulloch
45 "	Highgate	6 Orford	C. A. Milburn
	"	"	Miss A. F. Robinson
46 "	Bothwell	Bothwell, Town	H. H. Kelly, B.A.
	"	"	Miss M. Tupling
	"	"	Miss Z. Case
47 Kent, W.	Wallaceburg	Wallaceburg, Town	E. U. Dickenson, B.A.
	"	"	Miss L. M. Robertson
48 "	Dresden	Dresden, Town	G. A. Miller
	"	"	Berta Robinson
49 "	Tilbury	Tilbury Village	C. S. Wynne
	"	"	Bessie Alexander
50 Lambton, E.	Alvinston	Alvinston Village	F. Tanton
	"	"	Josie Switzer
	"	"	Lillian Gundy
51 "	Oil Springs	Oil Springs Village	H. E. Amoss, B.A.
	"	"	Miss M. Clark
52 Lanark	Lanark	Lanark Village	R. Beatty
	"	"	Miss M. M. Cole
53 "	Pakenham	4 Pakenham	Miss Mima A. Ellis, B.A.
54 Leeds & Gren. No. 1	Westport	Westport Village	B. C. Taggart
	"	"	Miss E. Kennedy
55 Leeds & Gren. No. 3	Spencerville	15 Edwardsburgh	F. P. Smith
	"	"	Jas. E. Burchell
56 " "	Merrickville	Merrickville Village	Stanley Wightman
	"	"	Herbert S. Bates
57 Lennox & Addington	Bath	Bath Village	E. J. Keenan
58 Manitoulin	Gore Bay	Gore Bay Town	R. O. White
	"	"	E. G. Scott
59 Nipissing	New Liskeard	New Liskeard Town	David T. Wright
60 "	Sudbury	Sudbury Town	John G. Lowe
	"	"	Miss L. M. Baker
61 Northumberland	Warkworth	2 Percy	G. B. Stewart
	"	"	P. O. Nelson

CONTINUATION CLASSES—GRADE A.—Continued.

ending December 31st, 1906.

Teachers.				Attendance and classification of pupils.													
How many giving whole time.	How many giving part time.	Professional certificate.	Annual rate of salary.	Total pupils enrolled.	Number of boys.	Number of girls.	Average age on Dec. 31, 1906.	Number who passed Entrance exam.	Number of days school open.	Aggregate attendance 1906.	Number of pupils from section.	Number from other sections.	How many other sections.	Number in 1st year (Lower school.)	Number in 2nd year (Lower school.)	Number in 3rd year (Middle school.)	Number in 4th year (Upper School.)
			$														
37	1	1st	650	42	17	25	15	42	200	2,493	23	19	5	17	25	....	....
	1	1st	400	....	....	....	....	....	....	....	....	....	....	....	....	....	....
38	1	1st	800	65	28	37	16	65	197	8,548	50	15	9	15	24	25	1
	1	1st	400	....	....	....	....	....	....	....	....	....	....	....	....	....	....
39	1	1st	600	41	19	22	13	41	194	4,026	27	14	7	11	18	12	....
40	1	1st	900	75	37	38	15	74	192	8,035	29	46	8	21	12	42	....
	1	1st	500	....	....	....	....	....	....	....	....	....	....	....	....	....	....
41	1	1st	600	32	13	19	16	31	198	5,794	18	14	8	10	9	13	....
....	1	1st	375	....	....	....	....	....	....	....	....	....	....	....	....	....	....
42	1	1st	970	143	70	73	15	143	191	18,651	87	56	20	63	49	31	....
	1	1st	540	....	....	....	....	....	....	....	....	....	....	....	....	....	....
	1	1st	475	....	....	....	....	....	....	....	....	....	....	....	....	....	....
43	1	1st	900	84	36	48	14	82	192	9,238	57	27	10	35	33	16	....
	1	1st	425	....	....	....	....	....	....	....	....	....	....	....	....	....	....
44	1	2nd	750	65	28	37	16	65	199	6,580	39	26	7	19	23	18	5
....	1	3rd	400	....	....	....	....	....	....	....	....	....	....	....	....	....	....
45	1	1st	700	56	28	28	15	55	198	6,295	34	22	7	19	11	21	5
....	1	1st	370	....	....	....	....	....	....	....	....	....	....	....	....	....	....
46	1	2nd	850	78	32	46	15	14	199	9,588	43	35	7	16	28	30	4
....	1	1st	400	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	1	1st	350	....	....	....	....	....	....	....	....	....	....	....	....	....	....
47	1	1st	1000	81	38	43	15	81	196	9,612	65	16	13	38	10	33	....
	1	1st	575	....	....	....	....	....	....	....	....	....	....	....	....	....	....
48	1	1st	800	86	33	53	15	86	199	10,576	62	24	5	23	27	35	1
	1	1st	500	....	....	....	....	....	....	....	....	....	....	....	....	....	....
49	1	1st	600	22	4	18	14	22	200	2,916	22	....	....	9	13	....	....
....	1	1st	500	....	....	....	....	....	....	....	....	....	....	....	....	....	....
50	1	1st	800	50	17	33	15	43	200	6,630	32	18	8	8	24	18	....
	1	1st	500	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	1	1st	375	....	....	....	....	....	....	....	....	....	....	....	....	....	....
51	1	1st	800	49	17	32	16	46	197	7,159	39	10	8	19	9	21	....
	1	2nd	400	....	....	....	....	....	....	....	....	....	....	....	....	....	....
52	1	2nd	600	62	31	31	15	62	194	8,094	33	29	16	20	12	30	....
....	1	1st	400	....	....	....	....	....	....	....	....	....	....	....	....	....	....
53	1	2nd	700	48	24	24	15	48	208	5,156	29	19	7	12	19	17	....
54	1	1st	700	30	12	18	16	30	185	3,041	27	3	2	10	9	11	....
....	1	2nd	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
55	1	1st	550	35	21	14	15	35	194	3,036	19	16	5	20	11	4	....
....	1	2nd	450	....	....	....	....	....	....	....	....	....	....	....	....	....	....
56	1	1st	650	50	20	30	16	50	192	5,983	32	18	7	14	18	18	....
....	1	3rd	450	....	....	....	....	....	....	....	....	....	....	....	....	....	....
57	1	1st	625	34	13	21	16	34	197	3,701	13	21	5	9	12	13	....
58	1	1st	815	40	10	30	16	40	198	4,236	17	23	12	16	13	10	1
....	1	500	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
59	1	1st	1000	14	6	8	15	8	73	658	14	....	....	10	4	....	....
60	1	1st	800	29	11	18	14	29	197	2,460	29	....	....	13	9	7	....
....	1	1st	550	....	....	....	....	....	....	....	....	....	....	....	....	....	....
61	1	1st	600	61	37	24	15	61	199	6,142	33	28	10	24	15	22	....
....	1	2nd	500	....	....	....	....	....	....	....	....	....	....	....	....	....	....

CONTINUATION CLASSES—GRADE A.—Continued.

Statistics for the year ending

Number of Pupils in

	English Grammar.	English Composition.	English Literature.	Canadian History.	British History.	Ancient History.	Mediæval History.	Modern History.	Geography.
37	42	42	42	17	17	25	.....	.....	42
38	65	65	65	65	65	25	.....	.....	65
39	41	41	41	41	41	30	.....	41	35
40	75	75	75	75	75	42	.....	.....	75
41	32	32	32	32	32	22	.....	.....	32
42	143	143	112	35	112	35	.....	.....	122
43	84	84	84	84	84	16	.....	.....	84
44	65	65	65	65	65	42	.....	60	60
45	51	56	56	51	56	32	.....	.....	51
46	78	78	78	74	74	62	4	.....	74
47	81	81	81	81	81	33	.....	.....	73
48	86	86	86	86	86	35	1	1	86
49	22	22	22	22	22	.....	.....	.....	22
50	50	50	50	50	50	18	.....	.....	50
51	49	49	49	49	49	30	.....	.....	49
52	62	62	62	62	62	30	.....	.....	62
53	48	48	48	48	48	36	36	48	48
54	30	30	30	30	30	22	30	30	30
55	35	35	35	35	35	4	.....	.....	35
56	50	50	50	50	50	18	.....	.....	50
57	34	34	34	34	34	34	.....	.....	34
58	40	40	40	40	40	10	.....	.....	40
59	14	14	14	14	14	14	.....	14	14
60	29	29	29	29	29	7	.....	.....	29
61	61	61	61	61	61	22	.....	.....	61

CONTINUATION CLASSES—GRADE A.—Continued.

December 31st, 1906.—*Continued.*

the various subjects.

Reading.	Arithmetic.	Algebra.	Geometry.	Trigonometry.	French.	German.	Latin.	Greek.	Zoology.	Botany.
37 42	42	42	42	.....	36	7	38	.....	.....	.....
38 49	65	65	65	.....	16	.....	29	.....	.....	49
39 41	41	41	41	.....	23	.....	32	.....	.....	.....
40 75	75	75	75	.....	42	.....	68	.....	33	33
41 32	32	32	32	.....	.....	.....	10	.....	19	19
42 112	143	143	69	.....	68	.....	102	.....	63	63
43 68	84	84	61	.....	32	.....	55	.....	.....	.....
44 42	60	65	65	5	25	5	25	.....	60	60
45 19	51	56	56	5	7	.....	47	.....	21	21
46 44	78	78	78	4	.....	3	62	.....	44	44
47 48	81	81	81	.....	10	1	30	.....	48	48
48 47	86	86	66	1	50	.....	76	.....	86	86
49 22	22	22	22	.....	20	.....	20	.....	22	22
50 50	50	50	50	1	28	9	48	.....	32	32
51 49	49	49	49	.....	5	.....	10	.....	28	28
52 32	62	62	62	.....	24	.....	52	.....	.....	20
53 48	48	48	48	.....	30	.....	42	.....	48	48
54 30	30	25	21	.....	26	.....	24	.....	.....	.....
55 35	35	35	20	.....	26	.....	20	.....	30	30
56 32	50	50	50	.....	.....	.....	3	.....	32	32
57 21	34	34	34	.....	.....	.....	33	.....	21	21
58 40	40	40	40	1	1	.....	30	.....	.....	.....
59 14	14	14	14	.....	14	.....	14	.....	14	14
60 29	29	29	29	.....	7	.....	29	.....	.....	22
61 61	61	61	61	.....	14	.....	27	.....	39	39

CONTINUATION CLASSES.—GRADE A.—Continued.

Statistics for the year ending

Number of pupils in the various

	Chemistry.	Physics.	Mineralogy.	Writing.	Book-keeping.	Stenography.	Typewriting.	Art.	Physical Education.	Special Commercial Course.	Special Manual Training Course.
37	20	20	.....	42	17	.....	.....	17	.....	.....	.....
38	25	25	.....	65	49	.....	.....	49	49	.....	.....
39	30	41	.....	41	29	.....	.....	.....	.....	.....	.....
40	75	75	.....	33	33	.....	.....	33	.....	.....	.....
41	22	32	.....	19	19	.....	.....	19	.....	.....	.....
42	50	69	.....	73	102	59	59	107	.....	9	.....
43	16	16	.....	35	35	.....	.....	68	48	.....	.....
44	60	65	.....	22	60	.....	.....	.....	.....	.....	.....
45	24	51	.....	19	19	.....	.....	19	.....	.....	.....
46	62	78	.....	44	16	.....	.....	16	.....	.....	.....
47	81	81	.....	48	38	.....	.....	48	.....	.....	.....
48	86	86	.....	47	47	.....	.....	47	.....	.....	.....
49	22	22	.....	22	9	.....	.....	9	.....	.....	.....
50	50	50	.....	24	24	.....	.....	50	.....	.....	50
51	30	49	.....	19	19	.....	.....	28	.....	1	.....
52	30	42	.....	20	20	.....	.....	20	62	.....	.....
53	48	48	.....	48	48	6	.....	48	48	12	.....
54	27	23	.....	.....	11	.....	.....	6	.....	.....	.....
55	35	35	.....	31	31	.....	.....	31	.....	.....	.....
56	50	50	.....	.....	14	.....	.....	32	.....	.....	.....
57	34	34	.....	21	21	.....	.....	21	.....	.....	.....
58	10	40	.....	40	.....	.....	.....	.....	.....	.....	.....
59	...	14	.....	14	14	.....	.....	14	14	.....	.....
60	7	29	.....	22	22	.....	.....	22	.....	.....	.....
61	37	61	.....	61	39	.....	.....	39	.....	.....	.....

CONTINUATION CLASSES—GRADE A.—Continued.

December 31st 1906.

	subjects. *Continued.*				Examination results.											
	Special Household Science.	Special Arithmetic and English Grammar.	Special Art Course.	Special Agricultural Course.	Candidates for District Certificates.	Number who passed.	Candidates for Jr. teachers.	Number who passed.	Number obtaining honors.	Candidates for Sr. teachers.	Number who passed.	Number obtaining honors.	Candidates for Jr. matriculation.	Number who passed.	Number obtaining honors.	Candidates for Sr. Matriculation.
37																
38		25					7	2					2	1	1	
39							2						4	1		
40							13	13	8							
41							4	1								
42							9	4	2				5	5		
43		16					2	1								
44							7	3		5	2		1	1		
45		20					8	7	2	5	4		4	2		
46		30					1	1	1	3						
47		21					7	2					7	4		
48		35					7	2					8	6		
49		22	22													
50		18	18				9	5	1				3			
51							11	8	1							
52							10	5	1				5	4		
53							8	5	4				7	7	3	
54							1									
55																
56							7	2								
57					5	2	4	2					2			
58		40			1	1	7	3								
59																
60					2	2										
61							9	3	3				1	1		

CONTINUATION CLASSES—GRADE A.—Continued.

Statistics for the year ending

Examination results.		Destination of pupils.						Occupation of parents.					Value of			
Number who passed.	Number obtaining honors.	Mercantile life.	Agriculture.	Law, medicine or the church.	Teaching.	Other professions.	Other occupations.	Commerce.	Agriculture.	Mechanical Occupations.	Professions.	Other callings.	Maps, globes, etc.	Scientific apparatus.	Library.	Models for drawing.
													$ c.	$ c.	$ c.	$ c.
37								10	15	12	4	1		185 00		15 00
38					1	1	8	4	13	5	3	40		150 00		10 00
39		3						6	17	10	4	4	60 00	20 00	30 00	
40		2	1		8	1	3	15	40	10	2	8	60 00	250 00	150 00	15 00
41							7	5	14	7	1	5	25 00	125 00	60 00	25 00
42		2		1	2	5	2	24	56	22	15	26	15 00	110 00	62 00	5 00
43		2	4		1	4	14	7	42	14	6	15	50 00	185 00	36 00	5 00
44				1	5		10	16	30	9	6	4	80 00	150 00		
45		2	1		9	1	7	7	32	3	6	8	70 00	165 00	25 00	
46		3	3		1		4	9	30	14	4	21	38 00	100 00	75 00	5 00
47		7	2		1	1	2	14	12	5	4	46	50 00	300 00	20 00	
48		3	1		2	1	16	13	31	15	1	26	4 00	65 00		5 00
49								18	4				30 00	25 00	15 00	
50		2	2		6		15	11	22	9	1	7		175 00	16 00	
51		5	1		4	1	7	8	16	16	4	5	54 00	150 00	37 00	
52		5	3	2	7		1	4	30	15	2	11	35 00	25 00	100 00	
53		5	4	1	5	2	2	6	32	6	2	2		24 00	10 00	
54		2					3	6	11	6	2	5		30 00		
55			1				4	3	21	2	5	4		83 00	16 00	
56		4	2		3		15	8	19	7	1	15	6 00	120 00		
57		2	4	2	2	1	1		23	2	2	7	10 00	50 00	6 00	
58				3				2	17	7	4	10				
59								2	2	2	1	7	25 00	100 00	11 00	
60		2				1	5	14	1	1	2	11		200 00	10 00	
61		2					1	5	34	7		15	20 00	200 00	15 00	1 0

CONTINUATION CLASSES—GRADE A.—Continued.

December 31st, 1906.—*Continued.*

	equipment.					Fees.			Grants.		
	Physical Education.	Typewriters.	Museum, aquarium, collections.	Total value.	Value of additions 1906.	Monthly fee, pupils of section.	Monthly fee, other pupils.	Total fees for year.	Amount of legislative grant.	Do. statutory county grant.	Special county grant.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
37				200 00	175 00	1 00	1 50	134 00	37 50	37 50	
38				160 00	75 00	.70	.60	159 00	300 00	300 00	
39				110 00	40 00	1 00		57 00	150 00	150 00	
40				475 00	200 00	50., 75., 1 00	1 00	477 35	300 00	300 00	100 00
41				235 00	90 00	75	75	160 00	150 00	150 00	50 00
42		150 00		342 00	85 00	1 00	1 00	917 95	450 00	450 00	150 00
43	8 00			284 00	57 00		70	117 00	300 00	300 00	
44				230 00	80 00		70	150 00	150 00	150 00	
45				260 00	60 00	75	75	209 00	300 00	300 00	
46				218 00			60	202 00	300 00	300 00	
47				370 00	25 00		1 00	89 00	300 00	300 00	
48				74 00	16 00	50	60, 1 00	158 89	300 00	300 00	
49				70 00	70 00	2 00	2 00	146 00	37 50	37 50	
50				191 00	5 00	1 00	1 00	234 00	300 00	300 00	
51				241 00	50 00	50	1 00	97 00	250 00	250 00	
52				160 00	14 00		1 00	196 00	150 00	150 00	
53				34 00	23 00	1 00	1 00	273 50	150 00	150 00	
54				30 00			50	7 50	150 00	150 00	50 00
55			5 00	104 00		1 50	1 50	169 50	37 50	37 50	
56				126 00	80 00		2 00	146 00	150 00	150 00	50 00
57			5 00	71 00	8 00		50	56 00	150 00	150 00	40 00
58							1 00	129 25	600 00		
59				136 00							
60				210 00	70 00		1 00		200 00		
61			10 00	246 00		$2 and $2.50	$3 to $5	376 50	150 00	150 00	

CONTINUATION CLASSES—

Statistics for the year

Inspectorate.	Name of School. Post Office.	Name of School. School Section.	Teachers. Names and degrees of teachers giving whole or part time to Continuation Class.
62 Oxford	Otterville	6 S. Norwich	Charles A. Garthwaite
63 "	Tavistock	U. 13 E. Zorra	W. J. Dunlop
64 "	Princeton	21 Blenheim	Thos. E. Moffatt
65 "	Norwich	Norwich Village	Henry Wing
	"	"	Daisy E. Taylor
66 Parry Sound	Parry Sound	Parry Sound Town	A. M. Currie
	"	" "	Geo. W. Hofferd
	"	" "	Jno. B. Johnston, B.A.
67 "	Burk's Falls	Burk's Falls Village	D. Currie
68 Peel	Bolton	Bolton Village	Alf. M Burchill
	"	"	E. L. Bice
69 Peterboro	Ennismore	4 Ennismore	Jno. A. O'Donohue
	"	"	M. F. Fitzpatrick, B.A.
70 Rainy River and Thunder Bay	Fort Frances	Fort Frances Town.	A. C. Crosby, M.A.
71 Simcoe N.	Creemore	Creemore Village	C. S. Carter
72 "	Elmvale	5 Flos	W. H. Kirkpatrick
73 Simcoe S.W.	Beeton	Beeton Village	W. T. Baker
	"	"	A. J. Willoughby
74 "	Cookstown	5 Essa	H. B. Wood
	"	"	Miss J. Vanvolkenburg
75 "	Stayner	Stayner Town	G. E. Rutledge
	"	"	Miss G. M. Smith
76 "	Alliston	Alliston Town	J. A. Spears, M.A.
	"	"	Winnifred Bell
77 "	Tottenham	Tottenham Village	Harry S. White
	"	"	Hattie Tremeer
78 Stormont	Avonmore	14 Roxborough	Mabel Drewry
79 "	Finch	3 Finch	James Froats, B.A.
80 Victoria W. and	Fenelon Falls	Fenelon Falls Vill.	T. E. Speirs, B.A.
	"	"	Miss E. A. Suttaby
81 Muskoka S.E.	Bracebridge	Bracebridge Town	H. R. Scovell, B.A.
	"	" "	M. I. Hodgins
82 Wellington N.	Palmerston	Palmerston Town	J. H. Cunningham
	"	" "	V. W. Rutherford
83 Wellington S.	Drayton	Drayton Village	Jno. W. Yoke
	"	"	Sara A. Jackson, B.A.
84 "	Erin	Erin Village	Miss S. L. Gregory
85 "	Guelph	McDonald Consldtd.	J. C. McNab
86 York N.	Mt. Albert	13 E. Gwillimbury	Fred Schooley
87 "	Schomberg	14 King	A. A. Cameron
88 York S.	Woodbridge	Woodbridge Village	M. A. Campbell
	"	"	A. G. McAllister
89 R. C. Sep. Schools E.	Westport	Westport Village	Sr. St. Andrew
90 " "	Eganville	Eganville Village	Sr. Ernestine
91 R. C. Sep. Sch. W.	Amherstburg	Amherstburg Town.	Sr. M. Ethelbert
	"	" "	Sr. M. Teresa
Totals		91 schools	

GRADE A. - Continued.

ending December 31st, 1906.- *Continued.*

Teachers.				Attendance and classification of pupils.														
How many giving whole time.	How many giving part time.	Professional certificate.	Annual rate of salary.	Total pupils enrolled.	Number of boys.	Number of girls.	Average age Dec. 31, 1906.	Number passed Entrance exam.	Number of days school open.	Aggregate attendance, 1906.	Number of pupils from section.	Number from other sections.	How many other sections.	Number in 1st year (Lower school.)	Number in 2nd year (Lower school.)	Number in 3rd year (Middle school.)	Number in 4th year (Upper school.)	
62	1	2nd	$550	28	15	13	16	28	207	2,848	22	6	4	4	13	11	....	
63	1	1st	750	36	22	14	15	35	206	4,616	19	17	7	12	7	17	....	
64	1	1st	550	29	9	20	16	29	203	3,408	15	14	6	13	7	9	....	
65	1	1st	675	66	31	35	15	64	200	6,794	31	35	10	10	27	29	....	
	1	1st	500	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
66	1	1st	800															
	1	3rd	800	70	24	46	15	65	196	6,957	47	23	17	45	15	10	....	
....	1	2nd	750															
67	1	1st	700	26	7	19	16	11	195	2,250	23	3	2	9	17	....	....	
68	1	1st	675	39	24	15	15	38	196	4,936	23	16	4	12	5	22	....	
....	1	2nd	500	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
69	1	2nd	475	29	9	20	15	20	192	3,844	10	19	3	19	....	10	....	
....	1	2nd	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
70	1	1st	900	26	10	16	16	15	197	2,713	22	4	3	17	....	9	....	
71	1	1st	600	34	10	24	16	34	195	3,448	24	10	5	13	7	14	....	
72	1	1st	600	37	12	25	15	36	87	2,327	24	13	7	37	....	....	....	
73	1	1st	750	44	21	23	15	38	196	6,066	26	18	6	16	17	11	....	
....	1	3rd	400	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
74	1	1st	675	37	17	20	14	37	201	5,508	25	12	5	10	9	18	....	
....	1	2nd	500	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
75	1	1st	700	55	32	23	16	55	196	8,200	35	20	4	30	16	9	....	
....	1	1st	450	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
76	1	1st	800	98	46	52	18	98	196	12,740	54	44	13	49	....	44	5	
....	1	1st	500	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
77	1	1st	700	59	31	28	15	59	198	6,042	38	21	3	12	10	37	....	
....	1	1st	475	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
78	1	1st	425	16	8	8	14	16	200	1,704	11	5	5	10	6	....	....	
79	1	1st	525	19	9	10	14	3	200	2,566	15	4	4	....	19	....	....	
80	1	1st	750	29	14	15	15	29	194	3,499	23	6	6	11	16	2	....	
....	1	Int. 1st	500	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
81	1	1st	1000	70	17	53	16	70	194	7,801	55	15	11	31	12	27	....	
....	1	1st	450	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
82	1	1st	800	51	15	36	15	51	201	6,137	45	6	4	24	9	18	....	
	1	1st	450	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
83	1	1st	750	90	32	58	16	89	198	10,139	46	44	12	27	27	36	....	
	1	2nd	540	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
84	1	1st	550	35	13	22	14	35	198	3,918	21	14	3	9	11	15	....	
85	1	1st	600	19	4	15	14	18	200	1,061	19	....	....	19	....	....	....	
86	1	1st	600	38	22	16	14	35	203	4,065	28	10	6	20	8	10	....	
87	1	1st	600	22	9	13	15	22	196	1,932	13	9	3	7	4	11	....	
88	1	1st	525	39	20	19	14	....	194	4,357	23	16	4	18	13	8	....	
....	1	1st	450	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
89	1	....	....	43	7	36	15	43	194	5,802	23	20	15	7	14	22	....	
90	1	Dis.	500	27	10	17	15	27	193	2,421	21	6	6	12	15	....	....	
91	1	....	350	51	11	40	16	44	199	5,847	32	19	2	25	19	7	....	
	1	....	200	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
117	27	121 1st 16 2nd 2 3rd	*	3993	1660	2333	15	3666	198	†2,280	2627	1366	569	1614	1143	1214	22	

* Average salary Principal, $662 ; Assistant, $467. † Average attendance.

CONTINUATION CLASSES—

Statistics for the year ending

Number of pupils in

	English Grammar.	English Composition.	English Literature.	Canadian History.	British History.	Ancient History.	Mediæval History.	Modern History.	Geography.
62	28	28	28	28	28	11	.....	.....	28
63	36	36	36	36	36	36	.....	.....	35
64	29	29	29	29	29	9	.....	.....	29
65	66	66	66	66	66	66	66	66	66
66	70	70	70	70	70	30	.....	.....	46
67	25	25	25	25	25	.....	25	25	25
68	34	34	34	34	34	34	.....	.....	39
69	29	29	29	29	29	10	.....	.....	29
70	25	25	25	25	25	9	.....	.....	25
71	34	34	34	34	34	14	.....	.....	34
72	37	37	37	37	37	.....	.....	.....	37
73	43	44	44	43	43	28	.....	.....	41
74	37	37	37	37	37	27	.....	.....	37
75	47	47	47	47	47	17	.....	.....	47
76	93	95	95	93	98	98	5	5	91
77	59	59	59	59	59	47	.....	.....	59
78	16	16	16	16	16	.....	.....	.....	16
79	19	19	19	19	19	.....	19	19	19
80	29	29	29	11	18	.....	.....	.....	27
81	70	70	70	70	69	24	.....	.....	68
82	51	51	51	51	51	18	.....	.....	51
83	90	90	99	90	90	36	36	90	90
84	22	22	22	22	22	22	.....	.....	22
85	19	19	19	19	19	.....	.....	.....	19
86	38	38	38	38	38	10	.....	.....	38
87	22	22	22	22	22	11	.....	22	22
88	39	39	39	39	39	8	.....	.....	39
89	43	43	43	43	43	22	.....	.....	43
90	27	27	27	27	27	6	.....	.....	27
91	51	51	51	43	43	26	.....	.....	43
	3885	3893	3817	3722	3860	1740	334	718	3794

GRADE A.—Continued.

December 31st, 1906.—*Continued.*

the various subjects.

Reading.	Arithmetic.	Algebra.	Geometry.	Trigonometry.	French.	German.	Latin.	Greek.	Zoology.	Botany.
62 28	28	28	23				11			28
63 36	36	36	36		19	29	36		18	18
64 20	29	29	29				24		20	20
65 37	66	66	66		60		66			10
66 40	70	70	70		18	4	39		20	25
67 25	25	25	25		25				25	25
68 39	39	39	39		23		10			39
69 29	29	29	29		29		29			29
70 25	25	25	25		15		15			25
71 13	34	34	34				34		20	20
72 37	37	37	36		33		29			
73 33	43	44	44		15		43			33
74 19	37	37	37		18		35			10
75 47	47	47	47		19		40		47	47
76 98	95	98	98	5	4		12		4	53
77 59	59	59	59		8		20		22	22
78 16	16	16	15		8		9			
79 19	19	19	19		19		19			19
80 27	29	28	28		20	12	28		27	27
81 52	70	68	68		36		56			38
82 33	51	51	51		51		51			
83 71	90	90	90		72	8	86		22	71
84 13	22	22	22				21		13	13
85 19	19	19	19		8		8		19	19
86 38	38	38	38		12		33		21	21
87 22	22	22	16		16		16		11	11
88 39	39	39	39		30		35			30
89 43	43	43	43		14		14			21
90 27	27	27	27		6		5			15
91 51	51	43	43		21					27
3325	4037	3826	3681	22	1626	134	2722		1454	2328

CONTINUATION CLASSES—
Statistics for the year ending

Number of pupils in

	Chemistry.	Physics.	Mineralogy.	Writing.	Book-keeping.	Stenography.	Typewriting	Art.	Physical Education.	Special Commercial Course.	Special Manual Training Course.
62	23	23	.....	28	17	.....	.....	28	.....	.....	.....
63	36	36	.....	18	18	.....	.....	18	36	.....	.....
64	29	29	.....	8	20	.....	.....	20	.....	.....	.....
65	29	66	.....	66	37	.....	.....	.....	.....	.....	.....
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
66	26	31	.....	41	41	.....	.....	.....	.....	.....	.....
67	25	25	.....	25	25	.....	.....	25	25	.....	.....
68	39	39	.....	39	17	.....	.....	17	.....	.....	.....
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
69	10	29	.....	29	19	.....	.....	29	29	.....	.....
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
70	9	25	.....	17	26	10	.....	25	.....	.....	.....
71	21	21	.....	20	20	.....	.....	20	.....	.....	.....
72	..	37	.....	.....	35	.....	.....	.....	.....	.....	.....
73	44	44	.....	16	16	.....	.....	.....	.....	.....	.....
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
74	27	37	.....	10	10	.....	.....	10	27	.....	.....
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
75	47	47	47	30	47	.....	.....	47	47	.....	.....
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
76	98	98	4	98	54	.....	.. ....	50	98	.....	.....
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
77	37	59	.....	22	12	.....	.....	12	59	.....	.....
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
78	14	16	.....	10	12	.....	.....	10	.....	.....	.....
79	19	19	.....	19	19	.....	.....	.....	.....	.....	.....
80	27	27	.....	27	27	.....	.....	27	.....	.....	.....
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
81	21	68	.....	52	52	.....	.....	52	.....	.....	.....
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
82	18	51	.....	33	33	.....	.....	33	.....	.....	.....
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
83	36	36	.....	54	54	.....	.....	54	90	.....	.....
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
84	15	18	.....	7	7	.....	.....	7	.....	.....	.....
85	17	19	.....	19	19	17	19	19	19	.....	4
86	10	38	.....	38	21	.....	.....	.....	.....	.....	.....
87	11	16	.....	22	16	.....	.....	16	.....	.....	.....
88	21	39	.....	39	31	.....	.....	.....	.....	.....	.....
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
89	36	43	.....	43	21	.....	.....	43	.....	.....	.....
90	6	27	.....	27	21	.....	.....	17	.....	.....	.....
91	26	26	.....	51	30	30	16	.....	51	.....	.....
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	2626	3446	105	2557	2370	156	117	2192	863	61	54

GRADE A.—Continued.

December 31st, 1906.—*Continued.*

	the various subjects.				Examination Results.											
	Special Household Science Course.	Special Arithmetic and Eng. Grammar Course.	Special Art Course.	Special Agriculture Course.	Candidates for District Certificates.	Number who passed.	Candidates for Jr. Teachers.	Number who passed.	Number with Honors.	Candidates for Sr. Teachers.	Number who passed.	Number obtaining Honors.	Candidates for Jr. Matriculation.	Number who passed.	Number with honors.	Candidates for Sr. Matriculation.
62							11	5								
63		17					2	2	2				2	2		
64							6	4								
65							10	6	2				4	2	1	
66			45		3	1	7	1					11	2		
67		25			5	2										
68		15					3						6	6		
69																
70					6	6										
71					5	1										
72																
73		10														
74			17		3	3	6									
75					7	6	7	3	1				1	1		
76							18	13	6	4	3		1	1		1
77					10	10	16	6					2	1		
78		16														
79		19			1	1										
80																
81							6	6	4							
82							6	2					9	9		
83							14	10	2				6	5	1	
84							5	2								
85	15															
86							2	1	1							
87							3	1					2	2		
88		39					3									
89							7	3	1							
90					1	1										
91					7	7	1									
	15	503	107	17	80	62	396	193	52	17	9		138	88	8	1

CONTINUATION CLASSES

Statistics for the year ending

	Ex. Results.		Destination of Pupils.						Occupation of Parents.									Value of
	Number who passed.	Number with honors.	Mercantile Life.	Agriculture.	Law, Medicine or Church.	Teaching.	Other Professions.	Other Occupations.	Commerce.	Agriculture.	Mechanical Occupations.	Professions.	Other Callings.	Maps, Globes, etc.	Scientific Apparatus.	Library.	Models for Drawing.
62	....	....	2	....	....	4	....	....	2	13	6	2	5	$ 50 00	$ 30 00	.....	$ 2 00
63	....	....	2	....	1	2	....	2	17	12	3	4	....	57 00	93 00	$26 00	2 00
64	....	....	....	....	....	4	....	2	3	13	3	2	8	50 00	60 00	58 00	.....
65	....	....	1	1	....	2	....	4	9	36	9	12	....	100 00	300 00	75 00	.....
66	....	....	8	....	2	4	1	10	20	15	6	4	25	25 00	200 00	.....	1 00
67	....	....	2	....	....	1	....	2	21	5	....	....	....	.....	110 00	80 00	2 00
68	....	....	1	....	3	4	....	....	3	22	3	2	9	70 00	180 00	.....	.....
69	....	....	....	3	....	....	....	3	....	28	1	....	....	40 00	160 00	50 00	5 00
70	....	....	....	....	....	....	....	6	3	7	5	4	7	7 00	104 00	3 00	.....
71	....	....	....	....	....	....	....	....	5	15	....	3	11	35 00	150 00	40 00	.....
72	....	....	....	1	....	....	....	7	8	12	1	2	14	27 00	36 00	27 00	.....
73	....	....	2	....	....	....	....	....	20	24	....	....	....	7 00	249 00	15 00	.....
74	....	....	1	1	1	1	1	1	5	22	1	1	8	15 00	135 00	10 00	12 00
75	....	....	2	....	....	3	....	3	30	17	7	....	1	40 00	75 00	.....	5 00
76	1	1	6	2	5	10	6	10	3	53	20	10	12	160 00	200 00	.....	15 00
77	....	....	2	1	....	12	1	....	13	35	5	2	4	5 00	135 00	2 00	.....
78	....	....	2	1	....	....	....	....	5	10	1	....	....	20 00	25 00	22 00	5 00
79	....	....	5	....	....	1	....	....	1	10	4	....	4	95 00	60 00	20 00	.....
80	....	....	1	....	....	....	....	2	7	9	3	3	7	45 00	95 00	30 00	.....
81	....	....	....	2	....	5	1	16	16	11	22	5	16	10 00	400 00	225 00	.....
82	....	....	....	....	....	2	....	....	9	21	8	3	10	20 00	500 00	.....	.....
83	....	....	4	3	1	6	....	8	7	46	10	4	23	40 00	200 00	5 00	2 00
84	....	....	2	3	....	....	1	7	4	17	2	6	6	30 00	65 00	10 00	3 00
85	....	....	....	2	....	....	....	....	....	17	....	....	2	117 00	150 00	30 00	10 00
86	....	....	5	....	....	1	....	1	8	10	8	2	10	10 00	170 00	7 00	.....
87	....	....	2	1	....	1	....	....	2	15	2	1	2	9 00	65 00	50 00	.....
88	....	....	12	....	....	1	....	....	10	15	6	4	4	.....	65 00	.....	.....
89	....	....	....	....	....	3	3	....	8	18	6	2	9	20 00	35 00	60 00	5 00
90	....	....	....	....	3	2	....	2	6	9	2	1	9	22 00	43 00	60 00	.....
91	....	....	7	1	....	8	1	2	6	18	10	2	15	45 00	595 00	235 00	28 00
.....	1	1	183	79	38	197	51	328	707	1747	536	240	763	2492 00	11884 00	2589	238 00

GRADE A.—Concluded.

December 31st, 1906.—*Concluded.*

	Equipments.					Fees.			Grants.		
	Physical Education.	Typewriters.	Museum, Aquarium, Collections.	Total Value.	Value of Additions 1906.	Monthly Fee, Pupils of Section.	Monthly Fee, Other Pupils.	Total Fees for Year.	Amount of Legislative Grant.	Amount of Statutory County Grant.	Special County Grant.
62			$ 8 00	$ 90			$ 50	$ 19 50	$150 00	$150 00	$160 00
63				178	$129	$ 50	1 00	164 15	150 00	150 00	
64				168	78	50	50	55 00	75 00	75 00	11 50
65				475	45	1 00	2 00	187 00	300 00	300 00	
66			25 00	251		1 00		29 00	500 00		
67				192	60				500 00		
68				250	70	50	1 25	161 50	150 00	150 00	
69	$10			265		2 50	2 50	475 00	150 00	150 00	
70				114	60				300 00		
71				225	156		1 00	38 00	150 00	150 00	
72				90			50	24 00	37 50	37 50	
73				271	120	1 00	1to8 00	146 00	300 00	300 00	
74				172	45	50	50		300 00	300 00	
75				120	20	50		60 00	300 00	300 00	
76				375	25	1 50		470 00	300 00	300 00	
77		$15		157	75	1 00	1 00	399 25	300 00	300 00	
78				72	40	50	50	76 00	150 00	150 00	85 00
79				175		1 00	1 00	95 00	150 00	150 00	75 00
80				170	60		1 00		150 00	150 00	
81			50 00	685	2	50	1 00	192 00	600 00	600 00	
82				520	100		50	20 00	300 00	300 00	
83	3		1 00	251	160	50c & $1	1 00	460 00	300 00	300 00	
84				108	50	1 00	1 00	137 00	150 00	150 00	150 00
85		125	5 00	437	35				150 00	150 00	
86				187	130	1 00	1 00	224 00	150 00	150 00	
87				124	100	1 00	1 00	95 00	150 00	150 00	
88				65	25	1 00	1 00	146 75	150 00	150 00	
89				120	10				150 00	150 00	
90				125	50		75	19 00	150 00	150 00	
91		90		993	18		75	79 50	150 00	150 00	100 00
	$26	$595	$109 00	$17,933	$4913			$11700 64	$18605 00	$16005 00	$5428 25

CONTINUATION CLASSES—GRADE B. Statistics for the year

	Inspectorate.	Name of School. Post Office.	School Section.	Teachers. Names and degrees of teachers giving whole or part of time to Continuation Class.
1	Algoma	Thessalon	Thessalon, Town	W. R. Tracy
2	Bruce W	Lucknow	Lucknow, Village	J. Stalker
	"	"	" "	Miss F. McLean
3	Carleton	Jock Vale	10 Nepean	Hattie M. Bartley
4	"	Manotick	18 Osgoode	Lila M. Ellis
5	"	Stittsville	12 Goulburn	Samuel Acheson
6	"	Hintonburg	Hintonburg, Village	H. W. Brownlee, B.A.
7	"	Carp	3 Huntley	S. A. Hunt, B.A
8	"	Malakoff	3 Marlborough	Margaret Muir
9	Elgin	Springfield	Springfield, Village	Geo. Stewart
10	"	Belmont	11 S. Dorchester	D. N. McGregor
11	"	Shedden	9 Southwold	Bertha E. Burwell
12	"	Pt. Stanley	Pt. Stanley, Village	R. A. Catherwood
13	Grey, S	Markdale	Markdale, Village	Jas. S. Rowe
14	"	Dundalk	Dundalk, Village	Jno. Urquhart, B.A.
15	"	Flesherton	5 Artemesia	N. C. Mansell
16	Haldimand	Selkirk	3 Walpole	E. O. Awde
17	Haliburton	Powassan	Powassan, Town	Geo. R. Coombs
18	Hastings, N	Marmora	Marmora, Village	Robt. Weir
19	Huron, W	Crediton	5 Stephen	Claude H Bluett
20	" E	Ethel	11 Grey	L. A. Shannon
21	Kent, E	Blenheim	4 Harwich [sea	Lydia M. Broadbent
22	Kent, W	Wheatley	4 U. Romney & Mer-	W. C. Dainty
23	Leeds & Gren. No. 3	Cardinal	Cardinal, Village	G. A. Weidmark
24	Middlesex, W	Melbourne	U. 16 Caradoc	W. G. Robinson
25	Manitoulin	Manitowaning	2 Assiginack	L. A. Jones
26	Ontario, N	Beaverton	Beaverton, Village	J. F. Givens
27	Oxford	Drumbo	11 Blenheim	F. O. McMahon, B.A
28	"	Burgessville	3 N. Norwich	P. H. Hendershot
29	"	Plattsville	24 Blenheim	Allan Gilmour
30	"	Thamesford	U. 5 E. Nissouri	G. R. Smith
31	"	Embro	Embro, Village	A. W. Kennedy
32	Prince Edward	Bloomfield	7 Hallowell	F. B. Clarke
33	"	Wellington	Wellington Village	Helen McSteven
34	Peterboro	Keene	4 Otonabee	P. T. Pilkey
35	"	Havelock	Havelock Village	Geo. Priddle
36	"	Lakefield	Lakefield Village	Jno. G. Gordon
	"	"	"	A. R. Jewell
37	Rainy River and Thunder Bay	Keewatin	1 Keewatin	F. C. Poole
38	Renfrew	Eganville	Eganville, Village	D. R. Harrison
39	Simcoe, S.W	Ivy	7 Essa	Gertrude Steele
40	Victoria, E	Bobcaygeon	Bobcaygeon, Village	J. M. Simpson
41	Waterloo, No. 2	Ayr	Ayr, Village	Geo. Dale
42	Welland	Bridgeburg	Bridgeburg Village	C. E. Hansel
43	"	Port Colborne	Port Colborne Vill.	D. W. McKay
44	Wellington, N	Clifford	Clifford Village	Jno. A. Gray
45	" N	Glen Allan	2 Peel	Geo. C. Scott
46	" S	Rockwood	9 Eramosa	W. J. Greenaway
47	Wentworth	Stoney Creek	3 Saltfleet	A. E. Wilcox
48	"	Hamilton	3 Barton	L. J. Raycroft
49	"	Carluke	11 Ancaster	G. W. Clark
50	Windsor & Walkerville	Walkerville	Walkerville, Town	Hugh A. Beaton
51	R. C. Sep. School, W	Kingsbridge	2 Ashfield	Marie C. Benn
	Totals		51 schools	

ending December 31st, 1906. *CONTINUATION CLASSES—GRADE B.*

Teachers.					Attendance and classification of pupils.													
How many giving whole time?	How many giving part time?	Professional certificate.	Annual rate of salary.	Total pupils enrolled	Number of boys.	Number of girls.	Average age Dec. 31, 1906.	Number passed Entrance exam.	Number of days school open.	Aggregate attend ance 1906.	Number of pupils from section.	Number from other sections.	How many other sections.	Number in 1st year (Lower school.)	Number in 2nd year (Lower school.)	Number in 3rd year (Middle school.)	Number in 4th year (Upper school	
1	1	....	1st	$750	32	7	25	16	30	198	2,897	32	....	....	9	18	5	....
2	1	....	2nd	700	79	30	49	15	72	198	10,395	60	19	8	18	41	20	....
..	..	1	1st	500	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3	1	....	2nd	400	21	4	17	15	17	187	2,825	12	9	4	13	8	....	....
4	1	....	2nd	500	20	8	12	14	20	187	1,901	11	9	5	10	10	....	....
5	1	....	2nd	600	34	15	19	15	34	195	4,075	7	27	9	9	13	12	....
6	1	....	3rd	850	40	20	20	15	36	198	4,496	27	13	6	28	11	1	....
7	1	....	2nd	550	26	7	19	14	26	196	3,807	17	9	7	13	13	....	....
8	1	....	2nd	425	14	10	4	13	11	180	1,533	11	3	2	6	8	....	....
9	..	1	2nd	575	25	13	12	15	23	191	3,107	24	1	1	13	9	3	....
10	..	1	2nd	550	24	12	12	14	24	208	2,540	8	16	3	14	10	....	....
11	..	1	2nd	400	15	8	7	14	15	207	1,198	14	1	1	4	11	....	....
12	..	1	2nd	575	15	7	8	13	15	196	2,216	14	1	1	14	1	....	....
13	..	1	2nd	650	37	19	18	15	36	199	3,656	30	7	5	17	10	10	....
14	..	1	1st	700	18	5	13	14	17	197	1,622	15	3	2	5	10	3	....
15	..	1	2nd	550	16	7	9	14	16	203	1,556	14	2	2	16	....	....	....
16	..	1	1st	500	29	19	10	15	29	208	3,760	25	4	2	18	11	....	....
17	..	1	2nd	675	27	6	21	15	26	197	3,733	22	5	3	9	6	12	....
18	..	1	2nd	675	24	12	12	16	24	198	2,738	21	3	3	10	14	....	....
19	..	1	2nd	550	14	9	5	14	14	203	2,128	10	4	3	10	3	1	....
20	1	....	2nd	425	21	5	16	14	20	208	1,192	21	....	....	21	....	....	....
21	..	1	2nd	450	13	5	8	12	13	207	1,791	13	....	....	13	....	....	....
22	..	1	2nd	460	22	13	9	14	21	201	2,942	22	....	....	18	4	....	....
23	..	1	2nd	600	24	6	18	14	24	200	2,556	22	2	1	24	....	....	....
24	..	1	2nd	475	26	16	10	15	26	207	3,536	14	12	6	12	6	8	....
25	..	1	3rd	650	18	3	15	17	18	196	1,967	17	1	1	7	11	....	....
26	..	1	2nd	675	22	10	12	13	22	190	3,022	22	....	....	22	....	....	....
27	..	1	2nd	550	27	9	18	15	26	203	3,505	20	7	2	7	10	10	....
28	..	1	2nd	575	23	12	11	14	23	210	2,663	20	3	2	19	4	....	....
29	..	1	1st	600	50	22	28	16	50	204	6,003	36	14	6	24	10	16	....
30	..	1	1st	600	11	2	9	15	8	198	2,563	8	3	3	7	2	2	....
31	..	1	3rd	490	23	12	11	15	22	196	2,170	22	1	1	14	9	....	....
32	..	1	1st	675	25	11	14	15	24	200	3,084	22	3	2	9	7	9	....
33	..	1	2nd	450	21	8	13	15	21	200	2,561	15	6	3	21	....	....	....
34	..	1	2nd	550	26	12	14	15	21	204	2,691	22	4	2	21	5	....	....
35	..	1	2nd	600	17	13	4	14	15	197	1,909	16	1	....	17	....	....	....
36	..	1	1st	700	14	8	6	15	14	198	1,074	10	4	3	14	....	....	....
..	..	1	2nd	350	....	....	....	....	....	....	....	....	....	....	....	....	....	....
37	..	1	1st	1000	23	6	17	14	18	204	2,926	23	....	....	13	10	....	....
38	1	....	2nd	650	30	15	15	15	30	196	3,078	24	6	6	10	18	2	....
39	..	1	3rd	500	22	13	9	14	22	209	3,116	18	4	2	6	7	9	....
40	1	....	2nd	600	38	22	16	14	36	195	3,341	28	10	4	15	9	14	....
41	..	1	2nd	600	18	5	13	15	18	196	3,049	13	5	3	10	8	....	....
42	..	1	2nd	900	36	22	14	15	34	197	5,047	36	....	....	15	21	....	....
43	..	1	1st	800	38	12	26	14	36	193	3,250	34	4	2	38	....	....	....
44	..	1	2nd	550	10	3	7	14	9	194	798	9	1	1	10	....	....	....
45	..	1	1st	500	13	3	10	15	13	207	1,779	11	2	2	5	8	....	....
46	..	1	2nd	600	18	8	10	13	16	202	1,979	16	2	2	18	....	....	....
47	..	1	2nd	600	21	6	15	14	20	200	2,762	13	8	3	19	2	....	....
48	..	1	1st	425	16	9	7	14	15	200	1,143	10	6	2	13	3	....	....
49	..	1	2nd	440	11	6	5	15	11	197	1,216	8	3	3	7	4	....	....
50	..	1	2nd	1200	26	11	15	15	26	172	1,960	25	1	1	8	18	....	....
51	..	1	2nd	375	19	3	16	15	17	208	2,140	19	....	....	9	10	....	....
11	42	12 1st; 37 2nd; 4 3rd.	*	1232	529	703	15	1174	199	† 749	983	249	130	702	393	137	....	

* Average salary, Principal, $597; Assistant $425. † Average daily attendance.

CONTINUATION CLASSES—GRADE B. Statistics for the year ending

Number of pupils in

	English grammar.	English Composition.	English Literature.	Canadian History.	British History.	Ancient History.	Mediæval History.	Modern History.	Geography.
1	32	32	32	32	32	12	.....	.....	32
2	79	79	79	79	79	60	.....	.....	79
3	21	21	21	21	21	21	21	21	21
4	20	20	20	20	20	10	.....	.....	20
5	34	34	34	34	34	34	.....	.....	34
6	40	40	40	40	40	11	40	40	40
7	26	26	26	26	26	.....	.....	.....	26
8	14	14	14	14	14	.....	14	14	14
9	25	25	25	25	25	12	.....	.....	25
10	24	24	24	24	24	.....	.....	.....	24
11	15	15	15	15	15	.....	15	15	15
12	15	15	15	15	15	.....	.....	.....	15
13	37	37	37	37	37	20	.....	.....	37
14	18	18	18	18	18	18	.....	.....	18
15	16	16	16	16	16	.....	.....	.....	16
16	29	29	29	29	29	.....	.....	.....	29
17	27	27	27	27	27	12	.....	.....	27
18	24	24	24	24	24	24	24	24	24
19	14	14	14	14	14	1	.....	.....	13
20	21	21	21	21	21	.....	.....	.....	21
21	13	13	13	13	13	.....	.....	.....	13
22	22	22	22	22	22	.....	.....	.....	22
23	24	24	24	24	24	.....	.....	.....	24
24	26	26	26	26	26	8	.....	.....	26
25	18	18	18	18	18	.....	.....	.....	18
26	22	22	22	22	22	.....	.....	.....	22
27	27	27	27	27	27	20	.....	20	27
28	23	23	23	23	23	.....	.....	.....	23
29	50	50	50	50	50	50	.....	.....	48
30	11	11	11	11	11	4	.....	11	11
31	23	23	23	23	23	.....	.....	.....	23
32	25	25	25	16	25	9	9	9	25
33	21	21	21	21	21	.....	21	21	21
34	26	26	26	26	26	.....	.....	.....	26
35	17	17	17	17	17	.....	.....	.....	17
36	14	14	14	14	14	.....	.....	.....	14
37	23	23	23	23	23	.....	23	23	23
38	28	28	28	28	28	2	.....	.....	28
39	22	22	22	22	22	12	9	9	22
40	22	22	22	22	22	8	.....	.....	22
41	18	18	18	18	18	.....	.....	.....	18
42	36	36	36	36	36	.....	.....	.....	36
43	38	38	38	38	38	.....	.....	.....	38
44	10	10	10	10	10	.....	.....	.....	10
45	13	13	13	13	13	.....	.....	.....	13
46	18	18	18	18	18	.....	.....	.....	18
47	21	21	21	21	21	.....	.....	.....	21
48	16	16	16	16	16	.....	.....	.....	16
49	11	11	11	11	11	.....	.....	.....	11
50	26	26	26	26	26	.....	.....	.....	26
51	19	19	19	19	19	.....	.....	.....	19
	1,214	1,214	1,214	1,205	1,214	348	176	207	1,211

December 31st, 1906.—*Continued* *CONTINUATION CLASSES—GRADE B*

the various subjects.

	Reading.	Arithmetic.	Algebra.	Geometry.	Trigonometry.	French.	German.	Latin.	Greek.	Zoology.	Botany.
1	32	32	32	32	.....	5	.....	18	.....	15	32
2	60	79	79	79	.....	8	.....	70	.....	20	33
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	21	21	21	21	.....	21	.....	21	.....	21	21
4	20	20	20	20	.....	6	.....	12	.....	.....	20
5	34	34	34	34	.....	34	.....	34	.....	34	34
6	40	40	40	40	.....	33	.....	12	.....	40	40
7	26	26	26	26	.....	12	.....	12	.....	26	26
8	14	14	14	14	14	14	.....	14	.....	14	14
9	25	25	25	25	.....	.....	.....	25	.....	.....	22
10	24	.....	24	24	.....	.....	.....	.....	.....	24	24
11	15	15	15	15	.....	.....	.....	.....	.....	.....	.....
12	15	15	15	15	.....	.....	.....	.....	.....	.....	15
13	37	37	37	37	.....	.....	.....	22	.....	.....	10
14	18	18	18	15	.....	6	.....	12	.....	.....	.....
15	16	16	16	16	.....	.....	.....	16	.....	.....	16
16	29	29	29	29	.....	11	.....	29	.....	26	26
17	27	27	27	27	.....	.....	.....	12	.....	.....	15
18	24	24	24	24	.....	.....	.....	20	.....	.....	.....
19	14	14	14	14	.....	2	2	4	.....	.....	10
20	21	21	20	20	.....	.....	.....	.....	.....	.....	.....
21	13	13	13	13	.....	.....	.....	.....	.....	.....	.....
22	22	22	22	22	.....	.....	.....	.....	.....	.....	22
23	24	24	24	24	.....	.....	.....	.....	.....	24	24
24	26	26	26	14	.....	16	.....	14	.....	18	18
25	18	18	18	18	.....	.....	.....	.....	.....	18	18
26	22	22	22	22	.....	.....	.....	.....	.....	22	22
27	27	27	27	27	.....	.....	.....	.....	.....	.....	20
28	23	23	23	23	.....	.....	.....	12	.....	4	23
29	50	50	50	50	.....	.....	.....	14	.....	12	12
30	11	11	11	11	.....	.....	.....	11	.....	9	9
31	23	23	23	23	.....	17	.....	19	.....	.....	.....
32	25	25	25	25	.....	.....	.....	.....	.....	.....	16
33	21	21	21	21	.....	21	.....	.....	.....	21	21
34	26	26	26	26	.....	16	.....	.....	.....	.....	.....
35	17	17	17	17	.....	.....	.....	.....	.....	17	17
36	14	14	14	14	.....	.....	.....	.....	.....	14	14
37	23	23	20	20	.....	.....	.....	12	.....	.....	23
38	26	30	28	28	.....	17	.....	26	.....	26	26
39	22	22	22	22	.....	5	.....	14	.....	.....	13
40	22	22	22	22	.....	.....	.....	.....	.....	14	14
41	18	18	18	18	.....	.....	.....	.....	.....	18	8
42	36	36	36	36	.....	.....	.....	.....	.....	.....	.....
43	38	38	38	38	.....	.....	.....	.....	.....	.....	.....
44	10	10	10	10	.....	.....	.....	.....	.....	.....	10
45	13	13	13	13	.....	.....	.....	13	.....	13	13
46	18	18	18	18	.....	.....	.....	12	.....	.....	18
47	21	21	21	21	.....	.....	.....	.....	.....	21	21
48	16	16	16	16	.....	3	.....	.....	.....	.....	16
49	11	11	11	11	.....	.....	.....	11	.....	.....	11
50	26	26	26	26	.....	8	.....	21	.....	.....	26
51	19	19	19	19	.....	.....	.....	.....	.....	19	19
	1,193	1,192	1,210	1,195	14	255	2	512	.....	490	812

CONTINUATION CLASSES—GRADE B. Statistics for the year ending

Number of pupils in the various

	Chemistry.	Physics.	Mineralogy.	Writing.	Book keeping.	Stenography.	Typewriting.	Art.	Physical Education.	Special Commercial Course.	Special Manual Training.
1	15	15	.....	32	32	.....	.....	32	.....	.....	.....
2	15	44	.....	44	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	21	21	.....	21	21	.....	.....	21	.....	.....	.....
4	10	20	.....	.....	20	.....	.....	.....	.....	.....	.....
5	34	34	.....	34	20	.....	.....	.....	.....	.....	.....
6	11	40	.....	28	28	.....	.....	40	40	.....	.....
7	12	26	.....	26	13	.....	.....	.....	26	.....	.....
8	14	14	.....	14	14	.....	.....	14	.....	14	.....
9	12	25	.....	25	22	.....	.....	22	25	.....	.....
10	....	24	.....	24	24	.....	.....	24	24	.....	.....
11	....	15	.....	15	15	.....	.....	15	.....	.....	.....
12	....	15	.....	15	15	.....	.....	15	.....	.....	.....
13	10	10	.....	37	37	.....	.....	37	37	.....	.....
14	....	12	.....	18	8	.....	.....	18	18	.....	.....
15	....	16	.....	16	16	.....	.....	16	.....	.....	.....
16	26	26	26	29	18	.....	.....	.....	.....	.....	.....
17	12	18	.....	27	15	.....	.....	.....	.....	.....	.....
18	....	23	.....	24	24	.....	.....	24	24	.....	.....
19	....	.....	.....	14	10	.....	.....	13	.....	.....	.....
20	....	.....	.....	21	21	.....	.....	21	.....	.....	.....
21	....	.....	.....	13	13	.....	.....	13	.....	.....	....
22	....	22	.....	22	22	.....	.....	22	.....	.....	.....
23	....	24	.....	24	24	.....	.....	24	.....	.....	.....
24	14	26	.....	18	18	.....	.....	18	.....	.....	.....
25	18	18	.....	18	18	.....	.....	.....	.....	.....	.....
26	....	22	.....	22	22	.....	.....	22	.....	.....	.....
27	20	27	.....	7	27	.....	.....	27	.....	.....	.....
28	4	23	.....	23	23	.....	.....	23	.....	.....	.....
29	50	50	.....	.....	12	.....	.....	12	.....	.....	.....
30	11	11	.....	9	.....	.....	.....	9	.....	.....	.....
31	....	23	.....	23	23	.....	.....	23	.....	.....	.....
32	9	16	.....	9	16	.....	.....	16	25	.....	.....
33	....	21	.....	21	21	.....	.....	.....	.....	.....	.....
34	....	.....	.....	26	26	.....	.....	.....	.....	.....	.....
35	....	17	.....	17	17	.....	.....	17	17	.....	.....
36	....	14	.....	.....	14	.....	.....	14	.....	.....	.....
37	....	23	.....	23	23	10	.....	23	23	.....	.....
38	28	28	.....	28	28	.....	.....	28	15	2	.....
39	9	22	.....	22	11	.....	.....	22	22	.....	.....
40	8	22	.....	22	14	.....	.....	14	.....	.....	.....
41	....	18	.....	18	18	.....	.....	18	.....	.....	.....
42	36	.....	.....	36	36	22	11	36	.....	36	.....
43	....	.....	.....	38	38	.....	.....	.....	.....	.....	.....
44	10	10	.....	10	10	.....	.....	.....	.....	.....	.....
45	....	13	.....	13	8	.....	.....	8	.....	.....	.....
46	..	18	.....	18	18	1	.....	18	18	.....	.....
47	....	21	.....	21	21	.....	.....	21	21	.....	.....
48	....	.....	.....	16	16	.....	.....	16	16	.....	.....
49	4	11	.....	11	11	.....	.....	11	.....	.....	.....
50	....	.....	.....	26	24	.....	26	26	26	.....	.....
51	11	11	.....	19	19	.....	.....	19	.....	.....	.....
	424	929	26	937	964	33	37	812	377	52	.....

December 31st, 1906.—*Continued.* *CONTINUATION CLASSES—GRADE B.*

subjects.—*Continued.* Examination results.

	Special Household Science.	Special Arithmetic and Eng. Gram.	Special Art Course.	Special Agricultural Course.	Candidates for District Certificates.	Number passed.	Candidates Junior teachers.	Number passed.	Honors.	Number of Senior teachers.	Number passed.	Honors.	Candidates for Jr. matriculation	Number passed.	Honors.	Candidates for Sr. matriculation.	Number passed.	Honors.
1					2	2												
2							15	4	2									
3																		
4																		
5		34					2						1					
6																		
7																		
8																		
9																		
10		24	24															
11		15	15															
12																		
13																		
14		18																
15																		
16																		
17					11	9												
18		24	24															
19																		
20																		
21					9	9												
22		22	22															
23																		
24		8					1	1										
25					7													
26																		
27																		
28																		
29							5											
30		2																
31																		
32							1											
33																		
34																		
35																		
36																		
37																		
38							1											
39				6	1	1	3	2					3	3				
40					4	1	8	4										
41																		
42																		
43																		
44																		
45																		
46																		
47		21																
48																		
49																		
50		26																
51																		
		194	85	6	34	22	36	11	2				4	3				

CONTINUATION CLASSES—GRADE B. Statistics for the year ending

	Destination of Pupils.						Occupation of Parents.					Value o			
	Mercantile life.	Agriculture.	Law, medicine or church.	Teaching.	Other professions.	Other occupations.	Commerce.	Agriculture.	Mechanical occupations.	Professions.	Other callings.	Maps, globes, etc.	Scientific apparatus.	Library.	Models for drawing.
1				2			15	7	8		2	$ 4 50	$69 50		$ 1 00
2	3			4		8	30	20			29	45 00	50 00		10 00
3						6		21					21 00	$2 00	
4	3					1	1	11	3	2	3		32 00		
5	2	2					2	21	2	1	8		76 00		
6	8					8		5	30	2	3	20 00	150 00	100 00	7 00
7							6	14	1		5		165 00		3 00
8						1		13			1	15 00	55 00	3 00	
9	1	1			1	1	6	9	2	5	3	10 00	70 00	15 00	
10	2	1		2		4	5	19				20 00	51 00	10 00	
11		2				6		10	3		2	10 00		20 00	
12							1		2	1	11	5 00	40 00	10 00	
13	6	4				5	14	13	5		5	15 00	10 00	46 00	
14				1		2	4	4		3	7	37 00	30 00	10 00	
15	2						2	5	4		5	75 00			
16	3	4		2			6	12	6	1	4		60 00		
17				2	1		10	9	4		4	50 00	70 00	5 00	2 00
18					2		7	2	5	2	8	50 00	50 00	95 00	4 00
19	1					2	4	9			1	8 00	7 00	6 00	3 00
20						12		10	3	1	7	20 00		20 00	
21	8							13							2 00
22	5	1		1	2	6	2	8	6	1	5	75 00	6 50	10 50	
23	2			16		6		2	16	2	4		100 00		
24	4	3		1		2	3	14	4		5		60 00		
25	1			3			8	4	3		3	12 00	25 00		
26	1	1					4	2	7	1	8	10 00		15 00	
27	2	1					6	17	3		1	40 00	100 00	10 00	
28								15		2	6		10 00		
29		3				9	7	19	10	2	12		50 00	30 00	
30					1	6	4	7					55 00	22 00	1 00
31		3				7	11	9		1	2	30 00	21 00		
32	2			1		8	4	7	6	1	7	40 00	35 00		
33							3	5	3	2	8	30 00			
34	1	3			3	3	1	10	4		11	90 00		80 00	1 00
35						6	1		1	1	14	25 00	1 00		
36						1	2	5	2	1	4		50 00		
37	5					10			9	1	13	20 00		45 00	5 00
38	1	1				5	6	5	8	5	6	25 00	180 00	10 00	
39				2	4		2	18	1		1	55 00	85 00	15 00	
40	2			3		6	4	6	5	4	19	10 00	10 00	25 00	3 00
41	2					2	7	2	5		4	6 00	11 00		
42	4					7	2	5	5	6	18	50 00	25 00		
43						18	11	5	12		10	114 00		20 00	
44	1					4		2			8	25 00			
45								11	1		1				
46	1	2				4	2	7	1	1	7		20 00		
47	1							21				25 00		40 00	
48								10	6			8 00		36 00	
49					2	2		11				12 00	25 00	10 00	
50	3	1				5	2	2	4	3	15	10 00		50 00	
51				2	2	4		19				5 00	43 00	11 00	1 0
	77	32		42	18	178	205	475	200	52	300	1,101 50	1,919 00	771 50	43 0

December 31st, 1906.—*Concluded.* *CONTINUATION CLASSES—GRADE B.*

	Equipment.				Fees.				Grants.		
	Physical education.	Typewriters.	Museum, aquarium, collections.	Total value.	Value of additions, 1906.	Monthly fee pupils of section.	Other pupils.	Total fees for year.	Amount of legislative grant.	Amount of statutory county grant.	Amount of special county grant.
				$ 75 00	854 00	$ c.	$ c.	$ c.	$150 00	$ c.	$ c.
1	.....	.....	.....	105 00	.....	50	1 00	200 00	75 00	75 00	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	23 00	.....	.....	.....	.....	37 50	37 50	312 00
4	.....	.....	.....	32 00	32 00	.....	.....	.....	30 00	30 00	.....
5	.....	.....	.....	76 00	11 00	50	50	118 50	75 00	75 00	275 00
6	.....	15 00	.....	292 00	85 00	.....	.....	.....	75 00	75 00	275 00
7	.....	.....	25 00	193 00	93 00	50	1 00	42 00	75 00	75 00	148 00
8	.....	.....	.....	73 00	57 00	.....	.....	.....	30 00	30 00	320 00
9	.....	.....	.....	95 00	50 00	.....	1 00	8 00	75 00	75 00	.....
10	.....	.....	.....	81 00	.....	.....	.....	.....	75 00	75 00	.....
11	.....	.....	.....	30 00	5 00	.....	.....	.....	75 00	75 00	.....
12	.....	.....	.....	55 00	.....	.....	.....	.....	75 00	75 00	.....
13	5 00	.....	.....	76 00	.....	.....	1 00	5 00	75 00	75 00	.....
14	.....	.....	.....	77 00	65 00	50	.....	7 00	75 00	75 00	.....
15	.....	.....	.....	75 00	.....	.....	.....	.....	75 00	75 00	.....
16	.....	.....	.....	60 00	.....	.....	50	15 00	75 00	75 00	75 00
17	.....	.....	.....	127 00	.....	.....	50	8 00	150 00	150 00	.....
18	10 00	.....	.....	209 00	159 00	.....	50	12 00	75 00	75 00	.....
19	.....	.....	.....	24 00	.....	.....	.....	.....	37 50	37 50	62 00
20	.....	.....	.....	40 00	.....	.....	.....	.....	37 50	37 50	12 50
21	.....	.....	.....	2 00	.....	.....	.....	.....	75 00	75 00	.....
22	.....	.....	.....	92 00	50 00	.....	.....	.....	37 50	37 50	.....
23	.....	.....	.....	100 00	.....	.....	.....	.....	75 00	75 00	.....
24	.....	.....	.....	60 00	20 00	.....	80	51 85	75 00	75 00	.....
25	.....	.....	.....	37 00	3 00	.....	50	6 00	150 00	.....	.....
26	.....	.....	.....	25 00	.....	.....	.....	.....	75 00	75 00	.....
27	.....	.....	2 00	152 00	.....	.....	50	40 50	75 00	75 00	50 00
28	.....	.....	.....	10 00	10 00	.....	25	5 00	75 00	75 00	.....
29	.....	.....	.....	80 00	50 00	.....	50	45 00	75 00	75 00	.....
30	.....	.....	.....	78 00	50 00	.....	75	17 50	75 00	75 00	.....
31	.....	.....	.....	51 00	25 00	.....	75	6 00	37 50	37 50	67 00
32	.....	.....	.....	75 00	20 00	.....	50	13 00	75 00	75 00	.....
33	.....	.....	.....	30 00	.....	.....	.....	.....	75 00	75 00	.....
34	.....	.....	.....	171 00	.....	.....	50	.....	22 50	22 50	.....
35	.....	.....	.....	26 00	.....	.....	.....	.....	75 00	75 00	.....
36	.....	.....	.....	50 00	.....	.....	.....	.....	.....	.....	.....
37	.....	.....	.....	70 00	40 00	.....	.....	.....	300 00	.....	.....
38	.....	.....	.....	215 00	150 00	.....	1 00	.....	37 50	37 50	.....
39	.....	.....	.....	155 00	26 00	1 00	1 00	64 00	75 00	75 00	.....
40	.....	.....	.....	48 00	10 00	.....	1 00	36 00	112 50	112 50	.....
41	.....	.....	.....	17 00	.....	.....	50	9 00	75 00	75 00	.....
42	25 00	90 00	.....	190 00	.....	.....	50	.....	75 00	75 00	.....
43	.....	.....	.....	134 00	.....	.....	1 00	14 00	75 00	75 00	.....
44	.....	.....	.....	25 00	.....	.....	.....	.....	22 50	22 50	.....
45	.....	.....	.....	.....	.....	.....	.....	.....	37 50	37 50	25 00
46	.....	.....	.....	20 00	20 00	.....	.....	.....	22 50	22 50	.....
47	.....	.....	20 00	85 00	20 00	.....	.....	.....	75 00	75 00	.....
48	.....	.....	.....	44 00	36 00	.....	.....	.....	22 50	22 50	.....
49	.....	.....	.....	47 00	35 00	.....	.....	.....	37 50	37 50	.....
50	10 00	100 00	10 00	180 00	10 00	30	.....	1 80	75 00	.....	.....
51	.....	.....	.....	60 00	.....	.....	.....	.....	75 00	75 00	75 00
	50 00	205 00	57 00	4,147 00	1,186 00	.....	.....	725 15	3,637 50	2,962 50	1,696 50

APPENDIX W.—THE SCHOOLS OF MASSACHUSETTS AND NEW YORK STATES.

During the month of March last, Mr. G. K. Mills, B.A., Public School Inspector for North Simcoe, paid a visit to the schools in Massachusetts and New York. He has been good enough to allow the Education Department to publish in the Minister's Report for the present year a very interesting and valuable account of this visit. Mr. Mills is probably the first Ontario educationalist who has given special attention to the rural schools in Massachusetts and New York, and his observations and conclusions are especially seasonable and valuable at a time when the Education Department is taking the first step in the re-organization of our Public School System, by improving the salaries and qualifications, and the equipment and accommodations of the rural schools in particular.

Massachusetts is not an agricultural state in the sense in which the term is understood in Ontario. Throughout the western part the Berkshire Hills are every where from 500 to 800 feet high. After leaving them the railroad crosses the valley of the Connecticut River and continues through a succession of low hills until it reaches Boston. If one is to judge from the number of stone fences, the country must have been covered by small boulders brought down by glacial action, and when the forest was cleared the work of removing these stones must have been enormous. Even when cleared of these, the soil is thin and stony, only a few inches covering beds of coarse gravel or the solid rock. No wonder that the opening of the enormous fertile tracts of the central and western states brought about an exodus from the New England states which removed most of the agricultural population. To-day these hills are overgrown again with small timber and about the only indications that much of the state was once farmed are the stone fences running through the woods, the gnarled old apple trees, and the cellar holes which indicate the location of houses that have long since disappeared.

But Massachusetts has become a remarkably wealthy manufacturing state, and this has also contributed to the depopulation of the rural districts. It is true that around the towns and cities every attempt is made to win produce from the soil to supply the necessary market truck and milk, but even with the high prices received, the cost of artificial manures which must be liberally supplied to the soil so reduces the profit that to our Ontario farmers it would look as though these people were hardly making a living.

The division of the county in Massachusetts is called a "town" not a "township" as with us. This town is irregular in shape and size, but would probably average 4 by 5 miles. The term "town" includes not only the district but the village or town that is situated in it. Each "town" (or township) is a unit and is independent of every other town and to a great extent of the state, in matters of education and government. The people do not elect a council as we do and leave all expenditure in their hands. Every town holds an annual meeting in March, in the town house, and in the "warrant" calling the meeting, notice is given of all the business that will come before it. At this meeting the citizens vote all appropriations of money for roads, streets, lighting, schools, etc. Every ratepayer has a right to take part in the discussions and to vote on these appropriations. It is a veritable village-moot. At the same meeting, or at an adjourned meeting held in April, three (or more as the town may decide), "selectmen" are elected to superintendent the expenditure of the money voted for roads,

streets, etc., and a school committee of three to manage the school affairs of the whole town. These elections are usually by a show of hands, but the secret ballot may be adopted if the meeting so determines.

The school committee engages the teachers and the superintendent of schools, frames the courses of study (beyond a few subjects that are compulsory in all schools), selects the text-books, purchases all supplies, attends to all building and repairs, consolidates the schools of the town if it thinks it advisable and has in fact complete control of the educational affairs of the town. No appeal from its action in any matter can be made to any higher authority. The state on the other hand confines itself to advising, stimulating and supplementing local activity. Compulsory legislation usually follows when a large majority of the towns of the state have adopted any improvement in educational methods.

There are ten normal schools in the state, each capable of accommodating two hundred students. The course is from two to four years, and while the schools are well attended, they do not by any means supply a sufficient number of teachers. The state does not set a standard of qualification. While local sentiment usually demands one, this varies with the town. Some require that the teachers shall be normal graduates, others that they shall have attended normal school or have taught for three years, while in others they are required to pass an examination held by the superintendent of schools. As this superintendent is usually engaged from year to year by the school committee, it behooves him to be easily satisfied with the qualifications of any candidate favored by a majority of the committee, or by some aggressive member of it. I visited one town where, out of seventeen teachers, nine were without complete normal training (two years), five without complete high school education (four years), and three with a year or less at high school. In fact only about forty per cent. of all the teachers employed in the state are graduates of normal schools, and about fifty per cent. have attended normal schools.

Every town and city, either alone or in union with another town, is required to employ, through its school committee, a superintendent of schools who has the care and supervision of the schools, under the direction and control of the school committee. The superintendent must possess a high standard of scholarship and pass a state examination in the methods, history, science, and philosophy of education. His powers and functions are not further defined by state. His relations to the school committee are purely advisory and he fulfils those duties that they may direct. He is usually engaged yearly, although after satisfactory service he may be elected to serve "during the pleasure of the committee." The minimum salary of superintendents is $1,500, of which the town or united towns must raise $750, while the states gives $1,250, three-fifths for the salary of the superintendent, and two-fifths towards the salary of the teachers. Besides actively supervising the schools he makes recommendations to the committee regarding school books and supplies, courses of study, engagement of teachers, etc.

Massachusetts has no state text-books. Each town and city selects its own, under the restriction that a change requires a two-thirds vote of the school committee. All schools, both public and high, all text-books and other school supplies are free; that is, they are purchased by the town or city and loaned to the pupils free of charge. This applies to tools, implements and materials used in the various forms of manual training, including cookery. The average cost per pupil throughout the state is $1.60 per year.

Evening elementary schools are required in towns of 10,000 or over, and evening high schools where the population exceeds 50,000. Every town and city with a population of 20,000 or more is required to provide manual training in both public and high schools. A "resolve" was before the state legislature in March of this year for discussion, the object of which was to compel, by 1910, the establishment of trade schools in every town with a population of over 10,000, the particular trades to vary with the nature of the local industries.

Owing to the concentration of the population in the manufacturing centres of the town, and the number of trolly lines running to almost all parts of the state, the problem of consolidation of schools is much simpler than in most other states in the Union. I should judge that perhaps one-third of the district schools of the state have been consolidated with the centres of population in the towns. This process of consolidation began in 1869, but it has proved a very troublesome question even under such favorable conditions. The attendance at the district schools is very small, averaging not more than twelve for the fifteen district schools that I visited. In the town of Berlin, however, about twelve miles from the city of Worcester, I visited a district school with an enrollment of 32 and an average attendance for March of 28. Around Boston for a radius of fifteen miles most of the towns have consolidated their schools, the children coming to the centres on trolly cars or being drawn in "barges." Around Worcester, Springfield, and Westfield for the same radius few of the towns have adopted the consolidation system. In the towns of Berlin and Shrewsbury the ratepayers at the town meeting in 1906 voted against consolidation. The committee of the town of Berlin spent $3,500 last year in repairing and fitting up the five district schools of the town. In the town of Brookfield some of the schools were consolidated, but they have gone back to the district schools. I found the same to be true in Framingham and in Penfield, New York state. The standard arguments against consolidation are as follows:

(1) Parents do not like to have their little children go so far from home.

(2) Little children become cramped and cold when they ride so far.

(3) Incompetency of drivers—drunkenness, bad language, lack of control of the children.

(4) Some of the larger children use foul language, sing ribald songs, impose on the little ones by crowding, throwing hats out of the rig, or worse.

(5) Increased cost.

(6) Decrease in the value of farm property.

(7) Impossible to get tenants when the school is so far away.

While no doubt much of the opposition arises from an innate opposition to what appears to be a radical change in a long established custom, and most of these arguments could be met successfully, still the fact remains that very many of the towns of Massachusetts have decided against consolidation under much more favorable conditions for its adoption than we can have in Ontario, and this after numerous illustrations of its working in all parts of the state, and after a discussion extending over from ten to twenty years.

Agricultural conditions in the state of New York are much like those in Ontario, and their school system resembles ours more than it does that of Massachusetts. Very few of their rural schools have been consolidated. The course for teachers in the normal schools is two years, but provision is made in many high schools for an elementary training which entitles them to a certificate for two years. All teachers in graded schools, unless they are

graduates of some college, must hold a state normal school certificate, but this is not necessary for teachers in country schools. The school commissioner, who corresponds to our school inspector, is elected every three years by popular vote. He may have been a teacher, or he may have followed any other occupation, but if he can get the party nomination he may be elected. He visits the schools once a year, and as his official existence depends on the votes of the people, he, like the same official in Massachusetts, gives no offence and makes no requests that may tend to make him unpopular with the people. The condition of the 15 rural schools in Massachusetts and the 8 in New York state that I visited is sufficient evidence that such a system is not the best for the schools. Such poor school accommodation does not exist anywhere in Ontario, unless perhaps, in the newly settled parts of the districts.

At the time of my visit a bill was before the New York Legislature which proposes to do away with the present system of school commissioners and appoint superintendents who shall hold office for five years. No superintendent shall have more than 40 schools and he must visit them every month (some said every six weeks). The state will pay $1,200 and the district $300, and $300 for expenses, for each superintendent. As the State Board approved of the bill, and everyone spoken to seemed to think it would become law, I have little doubt but the rural schools of the state will be greatly improved before long. If the eight schools that I visited are a fair sample of the rural schools there is plenty of room for improvement.

Owing to different conditions, it is a difficult matter to compare the work done in their schools with that done in ours, and to say that one is better than the other; so much depends on the individuality of the teacher, the principal of the school, and the superintendent. Shortcomings in their schools, as in ours, are frequently the result of poor administration rather of any weakness in the system. The following features in their system impressed me as particularly worthy of our consideration:

(1) Every grade was supplied with from four to six different reading books instead of being confined, as with us, to one book for perhaps two years (junior and senior classes). Besides providing the usual literary selections, these reading books deal with a great variety of subjects; and by the time the pupils have passed through the eight or nine grades of their schools they have a much broader general knowledge, a better appreciation of literature, and the school has done its duty towards cultivating a taste for books that are worth reading. In addition to these books for class reading, very many of the rooms of the graded schools have a small reading and reference library.

(2) More attention is given to the English subjects, such as reading, literature, composition (oral and written), and history. Their children write better English, they read with much greater appreciation, they speak readily with a correctness of expression and an intelligence not often met with in our schools. They do not spell better and the standard of arithmetic, particularly in the lower grades, is lower than ours. Their history is a large book written as an interesting story, while ours is a wretched little index of historical facts. The same comparison might be made of the geography.

(3) The classes in the American graded schools are smaller than in ours. In their primary schools I saw no room seated for more than 42 children, and it was a rare thing to find more than this number in their grammar schools, (grades 5 to 9). The usual number was from 35 to 40. As the pupils in the lower grades require more individual attention, the classes are smaller.

(4) In every graded school of a fair size there was a principal's assistant. For example, in a 10-roomed school there would be eleven teachers. The additional teacher allows the principal freedom from teaching for an hour or perhaps two each day to attend to the necessary business and supervision of the school, and provides for the proper teaching of special subjects, such as art and music. If this assistant is qualified to teach these subjects she does so, but if not she relieves the principal or some other member of the staff who is specially qualified. The time-table is arranged to suit the conditions.

(5) The law regarding school attendance and truancy is apparently much better enforced in Massachusetts and New York than with us. In Massachusetts the children must attend school until they are fourteen. Between 14 and 16, if they wish to obtain a position, they must go with one of their parents to the superintendent's office and present a certificate from their teacher showing satisfactory school attainments. They are then given an employment certificate. Even between 16 and 21, an employment certificate must be obtained. To get this the applicant must be able to read at sight and to write legibly simple sentences in English. If he is unable to do so an employment certificate is issued to him on condition that he attends night school; his employer is held responsible for his attendance if there is one in the town. This provision guards against illiteracy among foreigners.

In New York state, if the pupil wishes to leave school after he reaches fourteen, he must obtain an employment certificate from the commissioner of schools or from the principal of the town school. To obtain this he must have attended school for 130 days since he was 13 years old. The school records show the age of the pupil in all cases and cannot be disputed. If an employment certificate is not applied for, the child is regarded as a pupil of the school until he is sixteen.

(6) The most important feature of the Massachusetts school system is that of a single school committee for each town. This corresponds to what we would term a township board of trustees. It has been in force so long and has proved so satisfactory that no one thinks of any other system. It has many advantages among which I may mention the following:

(*a*) The cost of the schools is equally distributed over the town.

(*b*) The schools are better and more uniformly equipped.

(*c*) The salary of the teacher is based on ability and qualification.

(*d*) Small schools are consolidated if it is found to be better and cheaper.

(*e*) The higher grades are consolidated in schools equipped for the purpose.

(*f*) The poor district has the same advantage as the wealthy.

(*g*) The school committee is usually composed of progressive men who are aware of the benefits of education both to the individual and to the state.

(*h*) The efforts of the superintendent can be directed more to the teacher, as he has only one board to deal with: such a board is more likely to demand that the servant be worthy of his hire than would a dozen boards scattered throughout the township.

Their urban school buildings are better than ours and are better equipped. The teaching I believe to be better. This is owing to a better system of supervision, smaller classes, special teachers of art and music provided for by the extra teacher, and the emphasis laid on English and related subjects. Manual training and household science formed a part of

the course in all the urban schools I visited. Their teachers do not seem to work so hard as ours for examination purposes. I admit that when an American pupil comes to our schools we regard him as being far behind our pupils of the same age. So they are in arithmetic, history of England and Canada, geography of Canada; and, if they are in the lower grades, they will likely be behind in spelling. Too often our teachers regard this as a sign of the weakness of the American schools, but it appears to me to be due to a difference in the views we hold as to what is most necessary in an elementary education.

Our rural schools are far in advance of the rural schools I saw in either Massachusetts or New York state. Our buildings, school grounds, school equipment, with the exception of books and seats, are so much better that I was astonished. It is by no means fair to compare the rural schools of Massachusetts with ours, as the difference in the agricultural conditions and the rural population is so great, but in the wealthy agricultural state of New York the schools are little better. The buildings are small, very old, unventilated, playground very small and unfenced toward the road or frequently none at all, closets as bad as our worst, no globe, only a very cheap map of the state in half of them, two or three maps in the others, no pictures, and no wall decorations save the broken and discolored plaster. I saw only one rural school building that was creditable. It was a new building, but it was not equipped any better than the others.

I can attribute the much better condition of our rural schools only to the efforts of our school inspectors backed by the authority given them by the Province.

Huron Village Sites

BY
ANDREW F. HUNTER, M.A.

Being an Appendix to the Report of
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HURON VILLAGE SITES.

By Andrew F. Hunter, M.A.

POSITION OF THE HURON TRIBES AMONG THE ABORIGINES.

On the Dry Hills, in the northeasterly parts of Simcoe County, Ontario, the Huron tribes dwelt in well organized communities until their dispersion by the Iroquois in 1649-50. These tribes were near neighbors of various Algonquian tribes, who were the true natives of the forest belt. As a factor in the separation of different kinds of Indians from each other, the great North American forest belt played an important part in the geographical distribution of plants and animals, as well as of man. And while the Hurons naturally came under the influence of their Algonquian neighbors of the forests, and were like them in some ways, yet in many respects they resembled the Siouan tribes of the grassy plains in the west. Briefly stated, the Hurons were allied in blood to the Algonquins, but in language and some of their social institutions and usages transmitted by speech, they were allied to the Siouan tribes. And as they bore some resemblances to both of these peoples, it will be necessary to examine in detail some of their affinities with each one. First, then, let us speak of their relationship with the Algonquian tribes.

Some Affinities of the Hurons and Algonquian Tribes.

The forest tribes lived in lesser bands than the Indians of the plains, and, like all other communities in a low stage of barbarism, or with a low grade of civilization, they roved in the woods and along the streams as their necessities required. Under such conditions the villages of Algonquins were naturally small. The Hurons, on the other hand, lived in communities that were slightly larger, yet to a considerable degree their villages resembled in size those of Algonquins, except those which belonged to the years immediately before the close of the historic period, when they were compelled from danger to gather into larger villages resembling in size those of the Sioux. The Recollet and Jesuit missionaries saw prospects of doing better work among the populous, sedentary and agricultural Hurons, than among the nomadic Algonquian tribes, and accordingly opened missions in the remote Huron country in the very earliest years of their labors. Iroquois villages also occupied a middle position between Algonquian and Sioux in the matter of size, but upon the whole had larger villages than Hurons, and hence fewer of them in proportion to the whole population.

Huron myths and superstitious beliefs and practices, as given in the Jesuit Relations, though sometimes very meagrely, were closely akin to those of the modern Algonquian tribes of the same parts. The medicine-man, or "sorcerer," as the Jesuits called him, was the central figure of Huron paganism, as with Algonquian peoples generally. On the other hand, communal dances and ceremonies filled a larger place in the programme of Iroquois rites, although the public feasts were not by any means absent from the traditional practices of the Hurons. Here, again, in an altogether different connection, the Iroquois verged upon the Sioux more closely than did the Hurons.

In decorative as well as useful arts, and attainments in the skilful use of canoes, there were various resemblances between Hurons and the Algon-

quian tribes. In other respects, especially in agriculture, there was some divergence between them; while the differences between Iroquois and Algonquins were somewhat wider. Although possessing an individuality of their own, the Hurons held a middle position between Algonquins and Sioux. Some details in one representative branch of Huron art, furnishing an example in this connection, viz., the decoration of clay pipes, will be found in subsequent pages.

This survey of the ethnological features of the Huron stock, although necessarily brief, must suffice for the present to show their resemblances to Algonquins in some particulars, and differences in others. As some isolated feature, such as language, is too often over-valued by ethnologists in the classification of races, let us therefore make a further survey of these two chief aboriginal stocks of Ontario, in the other branch of research, viz., their physical traits.

People who live in small communities, like those of the Algonquin tribes, or in remote corners of mountain regions, are smaller in stature than people of the plains, where inter-communication takes place more freely. Some bands of Sioux were athletely built, and well proportioned, the men being often over six feet high.

In stature and physical form, the aborigines of North America east of the Rockies ranged in considerable variety between two extreme physical types, viz., the tall and lithe form of the western plains, and the squat, broad form at the northeast, the extreme examples of the latter being the Eskimo and some of the Algonquian-speaking tribes nearest them. Ontario Indians were hybrids or intermediate types between the two forms, ranging variously from the one to the other.

The physical characters of the Hurons had an intermediate position between the two extremes. If the bones of their ossuaries may be taken as affording us any evidence, of which I have seen a considerable number, the stature of the men seldom exceeded 5 feet 8 inches, and was oftener 5 feet 6 inches. This stature was much less than the common stature of the Iroquois, but resembled the modern Ojibways and Missisagas, now living upon the Ontario reserves. Here, then, we find another resemblance between the Hurons and the Algonquins.

While the bones of Hurons and their allied tribes, as found in Ontario bonepits to-day, (and about 200 such communal pits of the Hurons have been examined more or less vaguely by the white settlers, and reported upon with even greater vagueness), show them to have been chiefly medium in stature, sometimes, however, bones of tall persons are occasionally found in the Huron pits. In the County of Simcoe, Dr. J. C. Tache found a few large bones in one bonepit, out of 16 pits that he examined. The southward range of the short Eskimo type has been considerable, W. K. Moorehead having found bone remains in Ohio mounds of what seems to have been the short race (similar to modern Ojibways and Mississagas), as far south as the Muskingum River.

The Iroquois, many of whom were stalwart, were larger than Hurons, perhaps by mixture with taller races than Algonquins, and in a much less degree, therefore, did they resemble Algonquins than Hurons. In the matter of average stature, then, there was this order discernible amongst the aborigines:—(1) Algonquins, (2) Hurons, (3) Iroquois, (4) Sioux.

Finally, the stature of Hurons of the present day, known to be actual descendants, without much intermixture, of the old Hurons, reveals the medium type to which they belonged. Leon Gerin, writing of the Hurons of

Lorette of the present day (Transactions of the Ottawa Literary and Scientific Society, 1900, p. 89), says that massive build and high stature are not common at Lorette.

There is, thus, evidence from stature of some mixture of physical types among the Hurons, but the prevailing one is the medium or Algonquin-Eskimo.

The question of headform is commonly received as an important one in shedding light upon the grouping of tribes into classes, and has a substantial basis upon solid facts, although the use of the cradle board introduced an artificial element into cranial measurements that is more important than it is usually supposed to be, and weakens their value. And it was probably the same distorting influence, viz., over-pressure upon the cradle board in infancy, that has caused wormian bones to occur in about one-fourth of the Huron skulls.

As to the headform of the Hurons, long skulls were the prevailing kind in their mortuary deposits. The long-skull people of the Huron bonepits had crania resembling those of Algonquins in the same localities, many Algonquins having evidently been incorporated into the Huron tribes in the course of many generations of contiguous habitation. In Sir Daniel Wilson's earlier measurements, from which he estimated that, as a rule, Huron skulls belong to the long class (Huron Race and Its Headform, Canadian Journal, 2nd series, vol. 13), we find a result that has been generally confirmed by later investigators. The cranial index of Hurons varied between 74 and 76, although in a few cases it rises above, and falls below, these figures. Among northern tribes of Indians of the Algonquin class generally, the long headform preponderates. Some southwestern tribes of North American aborigines have the short type of head, while among the Eskimo the opposite extreme of long narrow skulls is reached. And between the two extremes we find a chain of gradations, just as we found for the stature of the aborigines, the Hurons occupying a medium position.

Some Affinities of the Hurons and the Sioux Tribes.

On the other hand, it would appear that in some respects the Hurons were even more closely related to the Sioux than they were to the Algonquins, the points of resemblance to the Sioux all depending on language for their propagation. The resemblance was ethnical rather than physical.

In the matter of food supply, the Hurons resorted to both hunting and agriculture, but were not so much hunters as tillers of the soil, having a similarity with the Sioux in this respect, and differing from the Algonquins. As canoemen, Hurons were better than Iroquois, yet they did not have the efficiency in this direction possessed by the amphibious Ojibways, who got their name itself from their deft handling of the birch canoe in the rapids. The Sioux were mostly land "animals," but the Hurons, as in other respects, held an intermediate position between the two extremes.

Again, the Huron practice of scaffold-burial and subsequent making of a communal pit for the bones was similar to the funeral practices of the Sioux. This mortuary custom has extended also to some Algonquin tribes, and has survived down to modern times. It was perhaps in some degree made necessary for winter when it was impossible for Indians to dig the ground with the tools at their command.

In games and dances there was considerable in common between Sioux and Hurons. Phalangeal, or toe, bones of deer, with markings, were in common use in Huron games, as their remains show, and also among the tribes of the plains for the same purposes.

In the decorative art of the Hurons, (on pottery, pipes, etc.), geometrical designs have an important place. These arts reached the Hurons from the direction of the Sioux and the southwestern tribes of the plains. In the opposite direction, (viz., among the Eskimo and remoter Algonquins), free-hand ornamentation prevailed, *i. e.*, the use of figures of animals, etc. This question will be treated more fully under the head of pipes of the Huron tribes.

Current Theories of the Origin of the Hurons.

After thus tracing some of the resemblances and contrasts between the Huron tribes and the two adjacent groups or stocks, (of which the grouping has unfortunately been founded upon the basis of language, which is a very frail method, but as it is the current one it would be inconvenient to depart from it), let us now review some of the current theories of the origin of the Hurons. The foregoing considerations have led us to the conclusion that the Huron language, akin to the Sioux languages, though remotely so, was once grafted upon a race stock akin in its physical characters to those who now use the Algonquian languages. They have also forced upon us the resemblance to a condition of things that would occur if some conquering Sioux had come from a treeless region, for example, one in the Ohio valley or the Mississippi valley regions, and had taken refuge in the forests of Canada, mixing in small numbers with the native Algonquins. In other words, that the Huron tribes derived their origin from the interaction of the Sioux and Algonquian peoples. I do not pretend to say that this was actually the way in which they arose, because all intermediate peoples could be accounted for in a similar way. It is impossible to define the exact lines along which the interaction has taken place, but some general facts in regard to it may be traced.

In this connection we should recall the fact that any migrations of whole nations has been less in amount than is usually supposed, and among barbarous peoples migration is merely local in its extent. The distance the Hurons had migrated to their last place of refuge in the northern parts of Simcoe County, could not have been very great.

The permanence of a race, with its indelible physical characters, in any definite locality, is a point that is frequently emphasized by good anthropologists, and the rule holds even for the Indians. In eastern parts of North America, as we have already observed, there were but two permanent extremes of races, viz., the tall type, of whom the Sioux tribes of the plains are the modern representatives; and the dwarfish Eskimo type. The Hurons and the Algonquins of the forest belt merged into the two extreme types on both sides of them, and were geographically intermediate, as well as occupying an intermediate position in stature, headform and other physical traits, between the two extremes, the Hurons having been almost like the Algonquins in their physical characters.

Theories of the origin of the Hurons, which assign to them some remote region as the source from which they came, do not have much to support them, especially the far-fetched Labrador theory. There are enough ancient Huron village sites dotting the surface of Ontario to-day to have served the Huron tribes as dwelling places for centuries. It has been claimed by some that the Huron tribes descended from the northeast to where they were ultimately found by the early French. This view is sometimes based upon a tradition obtained from the Indians themselves, as to the migrations of their ancestors, and is somewhat misleading. This may have referred to the origin of some Algonquian-speaking tribe or tribes, whose migration myth became

transferred to the Hurons by the contiguity of the tribes. The legend would obtain less currency among Iroquois than among the Hurons; and it is a fact that among some of the Iroquois tribes, who were more closely related to the Sioux than were the Hurons, physically as well as ethnically, there was a migration legend in which the opposite direction was given as the source from which they came. The missionary Kirkland, in his Journal of Travels in Western New York in 1788, says:—"A tradition prevails among the Indians that all Indians came from the west" (probably referring more especially to the Senecas amongst whom Kirkland labored). Supporters of the theory of the northeast origin cannot, therefore, afford to rest their case upon the Algonquian myth of their own origin, because merely through contact of the Algonquins and Hurons, the Huron myths had a large element of the Algonquin infused into them.

Horatio Hale, contending for a northeasterly origin of the Hurons, in an article on "Indian Migrations as Evidenced by Language" (read before the Am. Association at Montreal, 1882), based a theory of migration upon the law of "phonetic decay," as defined by Max Muller. Mr. Hale concluded, from his investigations upon the languages, that the Mohawk and Wyandot (*i. e.*, Huron) dialects were the parent stocks because their words were less contracted, and that these tribes must have dwelt nearest to the original seat; while the Senecas (the most westerly of the Iroquois tribes and the greater half of them), spoke a derived dialect. And in this way he infers that the Hurons took rise in eastern Canada, probably at Hochelaga, near the site of which he was standing when he read the paper on the subject.

Again, from the point of view afforded by the mounds, Mr. Hale, in another paper, appeared to think there is some light to be gained. He referred to the similarity of shell wampum from Huron graves and from the mounds of the Mississippi valley (Popular Science Monthly, Jan., 1886). The builders of the mounds are no longer an obscure mystery, scientific students having dispelled the extravagant notions once held about them; and they are now regarded as early Indians. But as articles were often bartered amongst tribes, the wampum may have reached one or the other of these peoples through the medium of trade, and would not necessarily show any relationship between them.

The mortuary remains of the mound builders consist of skeletons which are not essentially different from the same two physical types and the intermediate gradations between them, that are found at the present day, and which we have defined above. Viewing Hurons, therefore, as the successors or descendants of mound builders, as some writers have done, and the Sioux also as descendants of mound builders, the branch represented by the modern Sioux would spread up the valley of the Upper Mississippi, while the Huron tribes would follow the Ohio upward, driving the Algonquin nations northeastward before them, according to these writers, and mixing, partly at least, with them. From end to end of the great forest belt, on its side next the plains, there are traces of merging of the forest races with the mound building races.

Such expressions as the following are common in articles upon the Indian tribes:—"The Hurons and the Iroquois belonged to the same ethnical group, though they were at deadly enmity with each other." (Wilson's "Prehistoric Man"). The word "ethnical" is all important here, as the two nations were physically unlike each other; and the statement contains as much definite and practical knowledge of them as it is possible to have at the present stage of enquiry. Although it was not uncommon for Indian tribes of the same language stock to fall out and be at war with one another, there had to be

some wide dissimilarity in race before such prolonged hostilities could arise as rent the forests of Ontario in the early half of the seventeenth century; and the utter disparity of Hurons and Iroquois in everything else except language, and the ethnical arts and institutions immediately dependent upon language, was the fundamental reason why the deadly feud did not cease earlier than it did. The Crees and Blackfeet, on the Qu'Appelle and Saskatchewan Rivers, both Algonquin in speech but otherwise dissimilar, were also at war for years, from dissimilarity of race.

Looking into the remote past, therefore, we recognize a time when the Sioux culture invaded the forest belt and overran Algonquian ground, producing the mixed Huron cultures of later centuries. Survivals of cultures from older races than these may ultimately be discovered in Huron remains, but this cannot be done before more evidence upon the subject is obtained.

DECORATIVE ART ON CLAY PIPES OF THE HURON TRIBES.

As an example of the ethnic development amongst these tribes, an examination of their art in one illustrative department may suffice to show the application of the facts just reviewed in the foregoing section. Perhaps the most ingenious relics of the Hurons, Tobacco Nation, and their Algonquin neighbors on both sides of them, are the clay pipes which are found in such abundance on their village sites by the plowmen of to-day. In the making of pipes these tribes practised and developed the pictorial art to a surprising degree. As with all other peoples, there were prevailing fashions even in Huron clay pipes, and this is a point that I wish to emphasize very strongly at the outset, our chief object being to describe a few representative types rather than to attempt a treatise upon the whole subject, which is a very wide one.

The prevailing patterns amongst Hurons, Petuns and Algonquins were almost identical for the same period, only a few national or tribal differences being apparent. The Huron population, while the early French traded amongst them, was a medley from the effects of the war with the Iroquois. Need we, therefore, look for distinctively Huron, or characteristic art, in pipes, or indeed in anything else, amidst such a medley? If there were any characteristic arts, they were doubtless the remnants of the peaceful times before the war, when the four chief Huron "nations" lived farther south. Yet it is evident from some village sites that there were tribal differences even in the pipe art. The pipes from the latest sites prove to be somewhat of a medley, as we might have expected; and it is upon the earlier sites southward where we find the best proofs of individuality.

There was a very distinct preference amongst them for representing objects with life—plants as well as animals; and in the delineation of common objects strange notions were combined with natural features. People are not generally aware that the original inventors and mongers of "Yankee notions" (in pipes at least) were the Indians, who have left to us many odd ideas—weird as well as humorous. The notion that a savage commonly has of an object represented in art is well illustrated in the case of some Indians who witnessed a church festival at early Quebec. Father LeJeune tells us that they saw three images of the Virgin Mary in different places, and on being told that she was the mother of Christ asked how anyone could have three mothers. This circumstance illustrates with much force the difficulty that many primitive peoples must find in correctly comprehending the idea of a representation in art of any kind. Our own civilized people of the highest type become familiar with this mental process at a very early period in life through the multiplication of photographs, images, and all representations of the same object, but many Indians of primitive times never grasped the meaning of reduplication, however long they may have lived. The same difficulty has often turned up in the aversion of many savages to have their portraits made.

A primitive Indian believed there was a soul or spirit in the representing image of paint, clay or other material, just as he believed there was a soul or spirit in every other object and phenomenon. This was the usual fundamental belief of all primitive peoples. They believed the images upon the pipes to be in some way the abodes of the creatures they represented—to possess, in fact, a spirit. This was part of the Indian's religion, his "animal worship," as some people call it, and it would operate to improve the quality of his work in the plastic art. We may also be sure that if the pipe

was not well made, or was not in the pink of fashion, its owner would be exposed to a good deal of banter. In this way the quality of the work would reach the high state of perfection in which we find it to-day, and be kept up.

Some recent writers on pipes attribute very ingenious design and pattern to the influence of the contact with the early French: but this is merely a theory or reverie of the library arm-chair. It is impossible to think that a handful of paleface traders and missionaries, despised for the most part by the aborigines, should have moulded the æsthetic bent of the populous Huron tribes and "nations" within the twenty or thirty years between their arrival and the dispersion of the tribes. The enormous numbers of pipes made on a few patterns show that the entire populations of these tribes were familiar with the standard patterns possibly for centuries before the white men found them. Very often the patterns that are said to show early French contact are found upon sites that show no French contact in anything, but date before the time of Champlain and the earliest traders.

In the course of these Huron investigations, it has become abundantly manifest to me that the best pipe makers oftenest belonged to the regions of contact of the Hurons and Algonquin-speaking tribes, and that the question bears no reference whatever to the contact with the early French. Our modern estimate of the old Huron tribes, derived from the early French writers, is that they were inclined to be mercantile and predatory, trade and war going together in their case as in so many other cases of international relationship. On the other hand, the nomadic, Algonquin-speaking tribes were more isolated from the large masses of their fellows, thrust more upon their own resources as it were, and more utilitarian, though perhaps a little less aggressive as warriors than the Hurons. In the areas of contact between these two peoples, where enterprise combined with the resourceful, there we find the best attempts at pipe-making.

Some years ago, the late Dr. Tweedale of St. Thomas, Ont., called my attention to the fact that among the Neutrals the larger part of the clay pipes were plain, and that specialized forms were rare, such as the so-called "trumpet-mouthed" pattern of the Hurons, or the effigy pipes. If we will remember that the Neutrals lived further from the Algonquin-speaking tribes than the Hurons did, and differed more widely from them, the difference is readily accounted for. The Algonquins had an inclination chiefly for pictorial articles, or those decorated with the art of representation. The Hurons living next to them, had the same inclination in a large degree, but combined with it a taste for some of the merely decorative designs and geometrical patterns. The Neutrals, living still more remote from the Algonquins, also departed still further than the Hurons from the pictorial designs. This order is as we might have expected, because Algonquin-speaking tribes in Canada lived generally nearer the Eskimo, who, of all the primitive races with which we are acquainted, were most given to freehand representations on bone, ivory, etc., while the Sioux tribes of the plains, in the opposite direction, cultivated geometrical designs almost exclusively, as did also the Athapascan-speaking tribes and others of the Mountain belt.

It is well known that Algonquin-speaking tribes had a larger number of clans than the Huron tribes had, and that they had more "totemism" in their ceremonial practices and usages than almost any other group of tribes, the name "totem" itself, now so universal, being an Ojibway word. If we assume that in making pictorial pipes, some "totemism" was implied, we can easily understand why the representations of animals and plants in the art displayed upon their pipes should be so prevalent in the "home" of totemism. The clan system and totemism was prevalent in . . . early

Europe as well as among American aborigines, and even in our own times, the European families with long "pedigrees" still carry their "arms" as a mark or totem of their descent. So that if we would seek to establish a connection between the pictorial art of Algonquin-speaking tribes and the inhabitants of Europe, we shall have to go further back in time than the arrival of a few French traders among the Canadian aborigines in the seventeenth century, when the supposed transfer of ingenious ideas is alleged to have taken place when the two peoples met.

The facts of the case, therefore, appear to be these: The Algonquin-speaking tribes, who were mostly littoral peoples living along the shores of lakes and the rivers, and were also canoe-using peoples, were less devoted to the cultivation of tobacco, and indeed all other crops, than were the Huron-speaking tribes, especially the Tobacco Nation. Sites of the Algonquins far removed from Huron sites, or belonging to an earlier age than the Hurons, yield few pipes, while early Huron sites yield an abundance of pipes, but they are mostly inartistic in their designs. Briefly stated, the Hurons brought the tobacco plant and its cultivation, while the Algonquins, possessing the ingenuity to fashion good pipes, brought this ingenuity to bear upon the production of good work. And so it resulted that along the areas of closest contact of the two peoples we now find the best made pipes.

Human Faces of the Clay Pipes.

Persons of all ranks, shapes and conditions appear on pipes—portly matrons and skinny grandmammas, medicine-men, warriors bold and chiefs bedecked in their best, little men and big men, fat men and lean men, all have their images on the pipes. Some are in holiday attire as well as countenance, and often there are rows of dots along the forehead, presumably to represent some beads or other ornaments.

In all periods of the world's history some races have far excelled others in depicting the human features. Like the Egyptians of old and the Japanese of to-day, the Huron and his Algonquin neighbors had an innate gift for portraiture. Some of the human faces on pipes are so lifelike that we are often forced to regard them as the portraits of Indians who actually lived, moved and had their being in those old Huron days. These pipe-bowls represent the Huron features of countenance more naturally and more lifelike than the likenesses of Hurons made by the early French travellers and filtered through the artistic processes of the engravers of the day. It is true that, in the work of the native artists as displayed upon the pipes, there are often exaggerations of some salient traits in the features, as well as crudenesses in the art, but the Huron racial features have been preserved with an approach to faithfulness, in these unique memorials. One never finds a smile in the features represented in the pipes; everyone wears the same stolid air as on state occasions in real Indian life. It is only since the introduction of instantaneous dry-plate photography that laughter is, even among ourselves, regularly "taken," or indeed any other expression of short duration. The countenance in a quiescent state was the invariable product of all the earlier artists, whether savage or civilized. Before the invention of photography, the Indians who sat for their portraits were, like our own people on such occasions, on their best behavior, which of course did not include laughter, especially among the staid Indians. Hence we find no laughter depicted on the pipes.

As examples of this class of pipes, here are three representative specimens. The first is very highly decorated. Eight vertical slots are arranged along the forehead, the last outer slot at each side being a little lower than the others, and evidently intended to represent ears, or the ornaments attached thereto. The boy who found it (in Oro Township) called it an "Indian Chief," and the elaborate ornamentation certainly does suggest the name. As the ears are indicated, the other knobs on the top (one of which had been rubbed off) evidently indicate hair knobs—i.e., some kind of headdress. This is a somewhat common representation in Huron portraits of human heads. In this connection we may also recall the fact that some Algonquin neighbors of the Tobacco Nation were called "Chevaux Releves" by Champlain, from their prevailing fashion of wearing their hair, and the name Huron, itself, is said to come from their style of wearing the hair.

FIG. 1. "Indian Chief" Pipe. (Front view.)

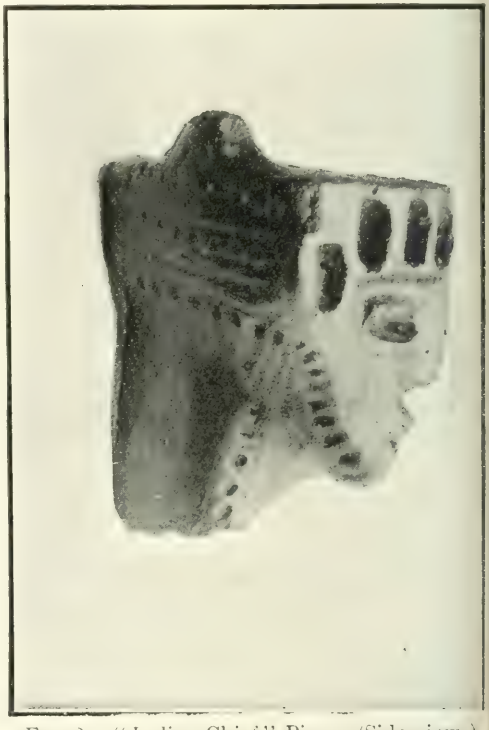


FIG. 2. "Indian Chief" Pipe. (Side view.)

The next pipe of this class is a veritable souvenir of "Sleepy Hollow." This specimen may not indicate good humor or laughter, but a war-whoop, or perhaps a sleepy yawn. In any case, it is the effort of an artist who evidently belonged to the impressionist school. Pipes of this kind are not by any means rare in the Huron country.

The third specimen has the physiognomy of an Indian who, if not a warrior, had at any rate a face so bold as to make the most courageous of us shudder when we look at his portrait. His grim visage has a likeness to the Old Man of the Mountain, whose face we are called upon to see in the profile of a high, rocky cliff in the White Mountains of New Hampshire. His Dantesque features have a stony stare, and his chin, which protrudes much beyond the normal amount, gives the owner the expression of strong executive power, not always wielded for good, as some of his other features would indicate.

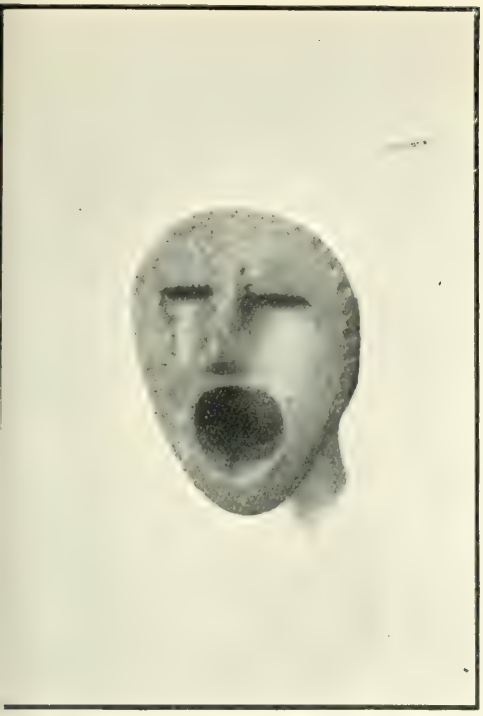


Fig. 3. Wide open mouth pipe. (Top view.) A war whoop, or a sleepy yawn?

Fig. 4. Side view of the preceding pipe.

5. Human face effigy pipe with a "determined" under-jaw.

Fig. 6. Face on the preceding (enlarged.)

Animal Forms on Clay Pipes.

These forms are often well made, and in some cases even the draughtsmen and plastic workers of our own race could not have designed them with the features better portrayed. The animal kingdom is represented by the wolf, beaver, deer, eagle, hawk, owl, heron or bittern and crane, coiled snakes, frogs, and many others. There was an obvious tendency to choose the biggest specimens in the animal tribes—the eagle and owl in the hawk tribe (rapaces), the raven in the omnivorous (hornbill) tribe, the panther in the cat tribe, the wolf and bear among the carnivora. Great things and portentous things commanded the attention of the Hurons in quite a human way, small and insignificant birds and animals being, for the most part, beneath their notice.

In this connection some questions will naturally arise—to what extent do these animal forms indicate the abodes of the clans from the positions where the specimens are found most abundantly, and to what extent were they merely pictorial? Were the pictorial pipes tribal marks, or clan emblems, used to denote clans, or did the Indians make them merely for amusement? This subject has already been referred to on a former page. It is evident that in many cases the pictorial pipes were emblematic, yet this was not universally true. According to Mecklenburg, each of the Mohawk clans or "tribes" carried its totem when they went to war in early times. Francis Assikinack, writing of the Ottawas, said that people of the same clan dwelt in a particular section or quarter of a village, with their totem on the "gate-post." (Canad. Jour. III., 117.) From these, and many other instances of segregation, we may suppose the tribal elements of the Hurons were indicated by the totems they bore, including the pictorial pipes. Unfortunately we have not yet sufficient data to decide these questions completely, although the evidence is accumulating from year to year.

The use of the open mouth as the pipe bowl is a common idea in Huron clay pipes, and I have seen different examples having this design with snakes, foxes and wolves, as well as the human face.

Some examples of the Huron animal pipes are realistic and lifelike pictures. In the American Museum of Natural History, New York, the pottery representations of animals made by the ancient Peruvians illustrate more than fifty different species. These were not on pipes, yet it need not surprise us if Huron animal representations are also numerous, with the more conspicuous features of each animal faithfully, though sometimes rudely, portrayed.

The long, slender limbs and forms of the heron and crane would be difficult to portray in clay, yet we occasionally find them in a cramped or conventional form. Their stately flight and deliberate movements seem to have impressed the Indians as much as they do ourselves. The crane is a clan still extant among the Lake Simcoe Ojibways.

Although there are multitudes of owl pipes, there was perhaps no owl clan among Indians; at any rate, any trace of such a clan has hitherto failed to come under my observation. But, as their legends relate, certain spirits took the form of an owl, especially the spirits about the graves of the dead. And it may have been in some such connection that the bird came to be depicted so often upon their pipes, rather than as a clan emblem. Being a bird of such evil omen, its conduct, or rather, its misconduct, did not warrant any gens in holding the bird in reverence as their progenitor. As well think of Judas Iscariot in connection with canonization, or the commemoration of

his name in any list of the departed saints. The facts and circumstances about the owl show the Indian's imagination at work, and his overpowering belief in the innumerable spooks around him. Indeed, the majority of image pipes of the Indians had more or less to do with the uncanny spirit world.

Imaginary Animal Forms on Pipes.

A proportion of the animal forms and images on pipes are so unlike anything in the heavens, earth or the deeps, that they must be representations of mythical creatures,—vague nondescript beings and ogres, in whose existence the Indians had a firm belief. George E. Laidlaw has stated (in his essay on stone pipes) that a proportion of the stone pipes show nondescript animals, etc. The same remark is true of the clay pipes. Some of the creatures represented defy classification, according to our received principles in natural history. These creatures were perhaps mythical. The Thunder Bird pipe, found in the territory of the Neutrals and identified by W. J. Wintemberg, goes to prove that Indians did portray legendary beings, and it shows the possibility of finding other mythical forms as well as the Thunder Bird. If the aborigines of Ontario had confined their attention to images of real beings, as white men now know the real beings, they had been alone in the world in doing so. The Egyptians, Assyrians, and Babylonians had their griffins and sphinxes and winged lions and bulls, and other composite, mythic animals, now strange to us. Even the cultivated Greeks and Romans had their mythical beings, and the mythology of those nations is a very elaborate compilation. In recent ages, and not very far from our own people, attempts at delineating Santa Claus and even the Devil himself have been frequent, the latter personality having a composite structure, with his horns, cloven hoofs, and forked tail on a human body. For the worship of the Devil, in gay Paris at the present day, there is a so-called "church," so strongly are the worshippers held by fancy. Poor "Lo," in the simplicity of his untutored mind, actually saw the repulsive spirit, or perhaps sometimes talked with him as a friend, and that was why he could make a picture of the being. Amongst figures and images fashioned by barbarous peoples, there are always grotesque forms, taste with them being unsettled and capricious. As the fantastic monster or nondescript animal was the outcome of an individual's imagination, and had a personality as many-sided as their imaginations were numerous, no duplicate of any object in this class could likely be found anywhere.

Plant Forms on Pipes.

While pipes are often found showing objects in the animal world, there is a corresponding class of pipes representing forms in the plant world. As examples of this class, I may cite the tobacco blossom (trumpet-mouthed shape), corn-cob, acorn cup, thimbleberry, not to speak of other common forms.

Plants and herbs have magical repute, barbarous peoples being unable to distinguish medicinal properties from magic. The relations which the plant pipes bore to the Hurons were evidently of a nature different from the so-called "animal worship" connected with the animal pipes. In many cases the plant pipes would be clan emblems; for example, there was doubtless a tobacco gens in the Tobacco Nation.

The clay pipe art of the Huron tribes imitated the common forms of plant life—foliage, flowers and fruit. The existence of this class of pipes, showing the commoner forms of plants, is not so widely known as the animal forms, and for this reason I wish to emphasize strongly the facts connected with its occurrence. These pipes are perhaps more common than the animal forms. Yet sometimes by reason of an infinity of repetitions of the plant model, the form becomes conventionalized and slightly concealed, but we can usually make out the meaning of the design. Often we see successful imitations of native flowers and fruit, as good as those of animals and human faces. The neat acorn-cup pipe, shown in the accompanying illustration, is a fair sample of this class. Was there an oak clan in the Township of Oro where the pipe was found? Among the Druids of ancient Europe, there was an oak totem, and the acorn-tree is sacred on the old Assyrian inscriptions at Ninevah, but we know very little as to the position of the oak clan in North America. The circumstances connected with this pipe need not create any connection between the Hurons and the Ten Lost

Fig. 7. Acorn-cup pipe.

Tribes, as in all times and amongst all peoples the oak held a high place. Most bulbous looking bowls are usually ornamental with lines (some doubtless intended to represent pumpkins), but the acorn pipe has dots.

The next pipe belonging to the plant class, of which an illustration is given, seems to represent a husk of corn, although the bend in it, to make the stem, may indicate that it belonged to the bean or pulse family. Sometimes we find imitations of the knot on the stalk of the Indian corn plant, as well as other members of the grass family. The cornstalk knot, placed at some little distance below the bowl, is a common feature on the shanks of clay pipes. In every kind of imitation of plant life appearing on pipes, we can see evidence of the unwearied industry of the females of the Hurons amidst their daily round of duties, coming so often into contact with the vegetable kingdom, and reminding us of the pale-face woman with her house plants.

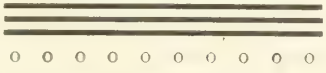
Conspicuous among the classes of Huron pipes is the so-called cornet or trumpet-mouthed pattern. This Huron pattern is so well known that I need say but little concerning its shape. It is safe to say that it is not a copy of a cornet, or other musical instrument, notwithstanding the assertion of a

recent writer on pipes to this effect. The Chinese opium pipes, and the Eskimo metal pipe-bowls, have nearly the same shape. Are these cornet-copies too? If the so-called cornet pattern, among Hurons at least, represents any material thing, it most likely represents a flower, the commonest product of every clime. The tobacco plant itself has a blossom of this shape, although anything to represent the petals are seldom shown in the pipe-bowls. But some pipes with this floral design have a scallop, or divided top, or are even divided into sections, presumably to represent the petals.

Fig. 8. Corn-husk pipe.

The Belt Pattern.

Another pattern is even more common on Huron sites than the preceding,—viz., one that I have provisionally called the "belt pattern." The decoration thus named consists of a mere belt of grooves around the top of



the bowl with a line of dots underneath them. Thus so many clay pipes are decorated in this way that they are a standard type and deserve to be placed in a separate class.

Such clay pipes as the belt pattern were perhaps a local phase of the clay pipe art, and it must be remembered that most art of primitive peoples was manifested in local phases. It is found universally over the entire Huron territory, although more abundantly in the south-westerly sites near Barrie, than in the others. There is a two-acre site in Vespra (No. 49) where all the pipe fragments I have seen bear exclusively this pattern, and I have

seen many such fragments on the site. G. E. Laidlaw has found some with the same pattern in the Balsam Lake district; and it is the same pattern, or a slight modification of it, that is found on some Neutral sites.

There are persons who profess to see in the lines and dots some mysterious story, but such an interpretation can only be fanciful. The markings are merely geometrical designs, and this peculiar ornamentation is more commonly employed by the Indian tribes of the grassy plains in the west than by the tribes of the forest belt. Pipes of this kind naturally fall into two divisions,—divergent and convergent, upward, enough of each kind being found to establish the two distinct types.

The belt pattern is found in combination with the cornet (so-called) and other patterns on the same pipe. Some interesting local variations of it are also found. At one village site (No. 47, Oro Township) the row of dots underneath the lines is always omitted, and the same variation may be found in other adjacent villages. At another village in South Orillia the dots are changed into dashes; the usual pattern, which is represented above becoming

This merely decorative pattern the aboriginal pipe-maker sometimes impressed on the raw clay by drawing a cord or thong around the bowl tightly with the hands. Accordingly, some pipes of this pattern show an unfinished part of the line where the cord did not fully encircle the bowl. In many other cases they made the lines with a pointed implement of bone or wood, perhaps after partial burning, as there is no glaze in the marked lines.

The belt pattern was much in vogue in the village sites of the period about the year 1600, but it rose and fell like all fashions. It is sometimes found in connection with iron relics, but usually not, thus pointing to an earlier time, for the most part.

SURVEY OF THE VILLAGE SITES.

In the pages which follow will be found some particulars about the Indian remains in two representative townships of the Huron territory—Flos and Vespra. As these are the concluding reports in a series covering the antiquities of seven townships once inhabited by the Hurons, it will be appropriate to say a few words in this place about the origin of the undertaking, the methods of working, the course and results of the work of survey, and the reports thereon now brought to completion.

When the writer first undertook the task of collecting notes describing the village sites, he had no idea that there had really been so large a number of village sites in the comparatively small territory between Lake Simcoe and Georgian Bay. He was fully aware, from the histories of the first half of the seventeenth century, that not a few villages must have existed. But the number he has located has surpassed any expectation he had at first, and has rendered the work a larger task than he had anticipated. In the previous reports on five townships, 273 sites came under review, while in the present two reports, 97 more are added. In addition to these, several others have come to my notice in the townships previously described, since the publication of the reports thereon, thus bringing the aggregate to a little more than 400. And it is not improbable that these are only one-half of the sites which really exist. In size, the sites range from two or three camps to towns covering fifteen acres; not by any means all occupied at once, but at different times, as the result of more or less shifting from place to place while the Huron nation dwelt in the territory. But a proportion of the sites were not Huron villages, and belonged to other times, all of which further complicated the task not a little.

Next to the actual location of as many of the village sites as could be found, it was important to acquire and record a general idea of the physical features and natural productions of the country in which the Hurons lived. This branch of the enquiry solves many problems and questions as to their occupation of the district, and shows their *habitat* to have been the hilliest tract in the centre of the small interlake peninsula. They prove to have been veritable Montagnais, or mountaineers, as well as agriculturists, entirely different in their mode of life from the nomadic Algonquins, who followed the rivers and lakes, camping mostly on the shores.

Then, to know something of the positions and courses of the early trails has not been the least of the advantages gained by the survey. For a white man to set out on the right trail, when the country was all covered with woods, and keep on it, he required Indian guides, who were alone to be depended on for such work. Champlain had Indian guides, and often the missionaries, who succeeded him, had also these necessary companions. Our survey, by unravelling the courses of the trails, considerably narrows down the problem of what routes Champlain and the missionaries actually took in their pioneer expeditions.

It has further become evident from this survey that the early sites are in the southerly townships, while the later ones are in the northerly townships; and that for the most part they all represent one continuous series. It was to this locality, protected as it is by water on nearly all of its sides, that during the wars with the Iroquois, (as the Jesuit Relations inform us), great numbers of the aborigines flocked from the more exposed parts of Ontario.

Altogether, the published notes are an effort to lay a substantial foundation for a general study of the Hurons, and to provide materials for the development of our knowledge of their relations with the early French traders and missionaries.

As a result of calling more attention to the Huron remains of the district, it may thus become, more than ever, the Mecca of mere relic-grabbers. Presumably, nearly all other townships in this province, and indeed throughout this continent generally, in comparison with Huronia, are quite as thickly bestrewn with relics of the aborigines as it is. So that the greater activity of relic seekers in the district, and their flocking to it, would result just as profitably in other quarters as it does here, and it is therefore in some degree misplaced. If, however, the services of these reports to history have some value, the incidental increase in the value of Huron relics cannot be a disadvantage.

In order to attain to some general view of the Hurons, based upon these researches, of which a few of the results have just been given, my plan was to reconnoitre the location or position of each site, if possible; determine the kinds of remains found at it and whether it yielded French relics; also burials, and what kinds, and the evidences of forest trails in the neighborhood of each. Other enquiries, more particular in their scope, or specially connected with each of the seven townships, were developed only as each township was reached in its due order on the map, the most northerly being the first disposed of, and the others following in succession southward across the district.

Before issuing a report of a township's sites, of which I had obtained some notes, I traversed, during the preceding season, many of the leading roads in that township, to get the physical features of each part. These were mapped from observation of the altitudes, the raised shorelines affording ready help in this connection. But for getting particulars of the village sites, on the help which I could hope to receive, it was impossible to canvass more than a small part of the dwellings for information. However, during the twenty years I have been gathering information promiscuously, I may have made some approach to getting all the more important of the sites. Generally, the farmers provided me readily with the leading facts, or what might be called the raw materials for the studies of which the reports are the outcome.

In the protracted researches upon which the reports are based, in order to verify the facts given in the text and otherwise prosecute the work, the writer travelled some 3,600 miles in the territory covered by the printed reports alone, not to speak of travels in other townships. And in these peregrinations, he visited personally the greater part of the village sites in the lists, travelling by bicycle, boat, horse-vehicle, besides some railway and pedestrian tours. With starting point for these trips at the Town of Barrie, which, as regards position in relation to the whole Huron territory, is not much less favorably situated than any other town in the district, especially in having radiating roads leading to different parts of it, he visited, inspected and examined all the sites within a reasonably attainable distance of the town; some of them quite frequently. And as for those more distant; the existence of a site, when the testimony of other persons became necessary, was proved by the statements of at least two persons independently of each other before it was entered in the catalogues.

In a uniform series of seven reports on the same number of townships, I have thus brought together some of the leading facts in regard to the Hurons and their remains. The five townships hitherto reported upon, the

reports on which have appeared in print, were these: Tiny, Tay, Medonte, Oro and Orillia. The report on Tiny was issued (in 1899) only as a separate pamphlet; of the next four, a portion of each was printed in separate form for binding with the others to form a connected work. The two townships now issued are the concluding ones for the interlake territory, usually known as the resort of the Hurons in the seventeenth century. Of these consecutive reports, some portion of all which appeared in separate form, and may be bound in one collection, a limited number of copies of the separata, arrangeable in sets, are still available for free distribution to students and institutions requiring them. And the writer is willing to give attention to any application for them until the remainder of the publications are distributed.

In any further prosecution of this work, whether it be carried on by the writer or by others, (and it will admit of a great deal of further development), it will not be so necessary to particularize new sites merely for the sake of increasing the number, or trying to form a complete list of Huron sites, since those sites in the catalogues now published (370 in all) are fair samples of all others that may be found. The collecting of other kinds of data will deserve more immediate attention. Among features requiring further scrutiny may be mentioned this one—a closer discrimination of the Huron sites from the earlier or gouge-using peoples wherever a distinction has been hitherto impossible from the information at the writer's hand.

In conclusion, he hopes that what data the reports contain may in some degree inure to the benefit of those who interest themselves in the antiquarian subjects of this province.

THE VILLAGE SITES OF FLOS.

This township, at its northwest corner, has a frontage of about three miles on Georgian Bay,—a frontage which, although small in some respects, is of more than ordinary importance, archaeologically, as it contains the outlet of Nottawasaga River, outlets of rivers being always important places in the life of the aborigines. Its Ojibway name,—Nahdoway-Saga,—meaning the "saga" or outlet of the river of the Nahdoways, signified that the outlet was a place of some importance even in the pre-Ojibway times when another race dwelt in the locality. Before reaching its outlet, the course of the river receives a great deflection to the west, passing nearly across Sunnidale township. It then passes through a range of high sand-dunes, which extends for many miles near the shore of the bay, and in this part has several crooked windings, one part being known as the Ox-bow. After passing through the largest sand-dunes, and just before entering Georgian Bay, it makes another sweep to the northeast, and comes back nearly opposite to the point which it left, nearly ten miles up, yet not more than three miles in a direct course. For the last four miles of its course it runs nearly parallel with the shore of the bay, and only a short way from it.

Physical Features of Flos.

It will be impossible to investigate the Indian occupation of this township with any thoroughness, without taking into account some of its physical features, and the recent, or surface, geology of the township, especially at the outlet of the river, and a few other places along its course. The extensive tract of sandy land lying within the large bend of the river is known as the Huckleberry Plains. Behind the range of sand-dunes there is a basin of flat land, and in this basin, Jack's Lake, which is a lake expansion of the river in Sunnidale township. It covers some 300 acres when the river is not flooded, and has marshy land extending beyond its margin for some distance. It is a remnant or survival of a much larger inland lake which covered parts of Flos and Sunnidale a few centuries ago, and whose bed (now dry except for this and another small lake known as Marl Lake) was too recent in age to collect many relics of the Indians. This inland lake existed really as a prolongation of the Georgian Bay up the valley. A large sand bar (now the range of dunes) was thrown across the lower end of the bay, and separated this lake from the main body of water. Some extensive peat deposits around Jack's Lake, however, seem to show that, although of a very recent date geologically, these deposits have taken a long time to accumulate, and that the lake in its present form, or something very similar, has been of long duration. Sometimes the level of this lake rises in springtime, with the flooding of the river, as in the Vespra lake-expansion. Then, there have been some oscillations of its level in the past, which it is not easy to understand. Modern Ojibway Indians of this district have a tradition of a change in the height of the water. "At first," they say, "the water was low; then it riz,' and you could sail a two-masted schooner where before there was dry land." I have heard this tradition only in connection with the Cold-water arm of Georgian Bay, but if true of one arm, it must be true of the whole, as water keeps its own level. And certainly the buried timber or forest beds, and layers of vegetable matter engulfed beneath thick sand measures throughout the low ground, bear credible testimony of such a capricious fluctuation in the level of the water.

About eleven feet higher than Jack's Lake, and two miles distant from it, is Marl Lake in Flos, covering some 200 acres, and having marshy margins. A stream flows from Marl Lake to the river. This lake is a remn-

ant of the earlier and wider expansion, like Jack's Lake, and has extensive Marl deposits around it, containing freshwater shells. Its height has been reduced a little by municipal drainage within the past ten years. These two small lakes have always been, and still are, the favorite breeding haunts of water-fowl, especially wild ducks.

The large quantity of freshwater shells found in the Marl beds, and along the marginal raised shorelines of the wider lake bed, furnish evidence of a warmer period in recent geological times,—about a thousand years ago, or perhaps less. Dr. Robert Bell, of the Canadian Geological Survey, was the first to point out this fact in connection with the raised shorelines north of Lake Superior. (Geol. Hist. of Lake Superior, Tras. Canad. Inst., Vol. 6, p. 54). The marl and shell deposits of this inner basin, (and likewise the similar deposits of a larger basin, or lake-expansion, in Vespra township, as we shall presently see), represent that warm period, which prevailed before the Hurons inhabited this district, but may have extended down nearly to their time. A part of Sunnidale township is added to the accompanying map of Flos in order to show the shape of the river's course in its lower parts, and the old lake expansions at higher levels than the present, there being two old margins now abandoned, which show prominently throughout the locality.

Still another feature calls for a few remarks. A ridge of boulder-covered clay land extends across the 12th concession of Sunnidale, having its crest in lot No. 9, and passing in a northwest direction. The raised shorelines of the ancient enlarged lake are distinctly marked against this ridge. Where the river reaches this ridge, it forms a series of rapids whose total fall in level has been variously estimated at from five to eight feet. But the deflection of the river through the sand barrier takes place soon after it passes the meeting place of the ridge and the river, as if the contest between the clay barrier and the sand barrier ended with the river choosing the easier course through the sand. Where the river passes through the sand measures, a gap in the sand hills also occurs, this being the place where the sandspits from the northeast and northwest shores respectively have their meeting place. It was upon the boulder and clay ridge thus described that the Indians dwelt in greatest numbers, and at the rapids they had their ancient fish weirs.

In the sand measures near its outlet, the Nottawasaga makes a considerable canyon in the loose deposits, the third in its course. The lowest basin, viz., that just within the sand range, extends up the river as far as the 4th line of Flos, the land rising step by step as one proceeds inland. In fact, the whole township may be said to rise thus in three stages:—1. The lowest area surrounds the level parts of the Nottawasaga near its outlet, as already described, and is lower than a conspicuous raised shoreline at 55 ft. above Georgian Bay. 2. Above the lake terrace at 55 ft., the land rises slowly, with wide plains having deficient drainage. 3. At some distance inland, one finds a country of greater declivities, with fertile plateau-like summits, consisting mainly of till. These hills are more marked than any of the preceeding. It was on their summits, and around their edges that the greater part of the Huron villages in the township were placed.

Resuming the description of the successive rises, we find that, near the 4th line bridge, at the head of the lowest basin, the river banks begin to heighten, and they increase in height very rapidly up stream. Numerous ancient spits and other formations had been formed in this locality when the old outlet of the river was here, just as those we have described were formed at a lower and later stage of the river's lifetime. And by reason of these old

formations at the higher and earlier stage, the present course of the river is more crooked there than in ordinary places. One of its largest deviations here is known as the "Big Bend." It is a significant feature in this part of the river (viz., in the middle canyon), the course of the river here having been deflected from the west by the old shore formations. The river passes through a broad ridge in the 1st, 2nd, and 3rd concessions of Flos, and has cut its second, or middle canyon through this ridge. This barrier ridge rises much higher than the series of recent, raised shorelines on either side of it. Along its northerly edge was located the main Huron trail to the Tobacco Nation, and in still earlier times, when the waters of Georgian Bay, (and likewise those of the inland lakes), were higher than they are now, this belt of land or broad ridge which here intersects the course of the river, was also the rendezvous of many pre-Huron Indians who had their villages along its south edge, or the north margin of the next inland lake in Vespra township, as we shall presently see.

Vigo, at the 4th line of Flos, and Edenvale, at the Flos-Vespra townline, on the outer and inner edges, respectively, of this barrier ridge, were the points most frequented by the Indians, just as they still are the leading places in the locality for their white successors, who have built bridges across the river at both places, but none between.

The course of the river through this ridge is a bend, having a direction the reverse of the large bend in the sand measures near the outlet. In the ridge it is such as to leave a considerable tract beyond its left bank in the southwest part of Flos. In this tract, a minor drainage basin, in which runs Doran's Creek, further subdivides the isolated territory in question into two, distinct parts. The more easterly of these two parts has its longer axis running south of west, and is cut by the present river; the other runs toward the Rapids in Sunnidale, near to where the aborigines had the other crossing of the river, as already noted. This drainage basin of Doran's Creek was probably an old blocked channel of the Nottawasaga, as the land on either side of it has the shapes and two directions peculiar to the other ridges formed in succession all the way from the river's outlet up to this place.

As we pass toward the interior of Flos, away from the river, we rise upon a belt of gently undulating country, and in its rear a shallow trough of flat land, but its altitude is higher than that of the flat ground near the river. Immediately north of Phelpston, and near the centre of the township, there is an extensive marsh in the trough just mentioned, containing 1,000 acres or more. It has an extreme length of fully three miles, and an extreme width in one direction of two miles. In the centre of this marsh there was once a shallow lake, but the Municipal Council of Flos removed this lake by artificial drainage in 1897, its outlet by the way of Marl Creek, having been cleaned out and deepened for that purpose. When the writer first knew the large marsh in question, before its drainage, it had the small lake near its centre, upon which boats were used. Flocks of wild ducks frequented its surface, and in the lake itself, fish of the pike tribes were common. Extending around the edge of this lake, there were wide tracts of rushes and coarse grass, amongst which pitcher plants were to be seen growing in the water; while around these tracts came a dense fringe of willows. Outside of the willows came the forest. In these suitable haunts, waterfowl and waders, (cranes, herons, etc.,) used to breed. In the edge of the water, there was to be found, in considerable numbers, a species of black snake, which was confined, so far as this district is concerned, only to the marsh. In the surrounding forest, bears were occasionally seen, and deer were still accustomed to yard in the remotest parts of the marshy wilderness. There was plenty of

game for the native red men of ancient times, and even for the Indians of modern days. But all this was changed when the drainage came, and with it the removal of the surrounding forest.

A few miles distant to the northeast of this large marsh is the valley of the River Wye, which flows out of Orr Lake at an altitude the same as that of Lake Simcoe, (viz., 720 ft.) and that of many other small lakes in the district. In the basin of the Wye, the land is unusually flat. The timber of the original forest consisted mostly of water elm, from which the locality came to be known first as the Elm Flats, and later as "Elmvale." The meandering Wye so nearly encircles Elmvale, that it is almost impossible to enter the village by road without crossing the stream. In such flat ground, Indian remains have not been, and we need not expect they will be found in any considerable quantity. French's Hill, in the northeast corner of the township, is an eminence which makes a conspicuous landmark in the view for many miles around, its highest parts rising about 280 feet above Orr Lake and the Wye River.

In the east and southeast parts of the township there is also some high ground. On the lofty plateau of "Upper" Flos, in the east of the township, there are no wells, rainwater alone furnishing the only water supply of many of the farmers, all of them, indeed, with but two or three exceptions. Wells having a depth of about 200 feet have to be sunk, and even these are almost unworkable. Yet this is one of the most fertile parts of the district, —"as fruitful as a garden,"—consisting, as it does, of so-called boulder clay, or a modified till. The prominent raised shoreline at 790 feet above sea level girdles these hills and ridges along the east side of the township.

The Village Sites in Flos.

Those village sites of Flos, about which some evidences have come to my attention, number 43; and when compared with many in Medonte, Tay and Tiny townships, they are found to be generally smaller, yet they form an instructive and important part of the whole Huron group. We may divide the Flos village sites into Huron and Pre-Huron; the former, again, into historic and prehistoric; and thus we have altogether three classes, viz., Historic Huron, Prehistoric Huron, and Pre-Huron, passing in order from the most recent to the earliest. Most of the Huron sites in the township are near the trails. Other sites of smaller size and seemingly of less importance, belonging apparently to the Pre-Huron class, have straggling positions in the other parts of the township that are distant from the trails of Huron times, and were probably of earlier date than the Hurons. Numerically, the Prehistoric villages, whether early Huron or Pre-Huron, constitute about two-thirds of the entire list.

In the vicinity of the Nottawasaga River there are several sites, and they appear to belong to different periods, as we might expect them to do. There is a wide tract of flat land in the northwestern part of the township, near the river, as already noted, and extending away from it, where village sites are scarce, or even entirely wanting in some places. Along the lot 20 sideroad, for example, there was apparently no crossing from the third line to the eighth line, where Indians could get dry footing in summer time, when the forest covered the land.

In the centre of the township, north of the Phelpston Marsh, there is low undulating country, which seems to have been inhabited by tribes earlier than the Hurons. There are not many actual sites of these Pre-Huron tribes to be found, but their gouges, roller pestles, stone axes, and other pre-historic implements, unmistakeably proclaim their presence in this district.

On the ridge that passes through the south side of the township, the Huron sites, like most others in Huronia, are on the northwest side of the ridge, presumably through dread of the depredations and forays of the relentless Iroquois. With their native caution, the Hurons feared to show even the smoke of their villages to their long-standing enemy, the thick woods being no protection against the quick sight of the Iroquois when looking from one hill to another in search of signs of the quarry, especially in the severer season of the year when the foliage was wanting, and camp fires were more numerous.

The higher branch of this ridge in southeast Flos had no outlet across the wide swamps southward, and so the Hurons frequented it less than they probably would have done if it had ready access in summer at both ends. But on the other hand, as it afforded a shelter at its south face on that very account, there are a few sites there, besides the chain of sites along its north end, where the great trail to the Tobacco Nation touched it. The ridge in east Flos lay in the course of this great trail, and was plentifully dotted with sites.

The question as to the frequency of French relics, and the solution afforded by the sites of Flos, furnish evidences of Huron migration similar to that found in the townships formerly examined. Deducting from the 43 sites, six (viz., Nos. 7 and 13-17 inclusive), which I conclude were distinctly Pre-Huron, without signs of being overrun by Indians of the Huron tribes, we get 37 sites that belonged to Hurons, in all probability. Thirteen of the 37 sites yield French relics in small quantities, or 35 per cent. of the whole. In "Upper" Flos, i.e., the high ground of the ridge in the east of the township, the farmers find occasional iron relics of the early French, especially near the great Tobacco trail; but these are by no means so plentiful as on the hills north of Orr Lake. The obvious conclusion from this is that the more southerly of the two ridges was abandoned by the Hurons early in the historic period. In Champlain's time, the Hurons probably inhabited it, but soon afterward withdrew into the more sheltered or more secluded part of the territory farther north.

In the case of nearly every village site in the list, pottery fragments are found abundantly where the camps stood. In fact, this is one of the main features in determining where there was a village site. Accordingly it will be unnecessary to mention the circumstance of finding these common relics everywhere, but exceptions to the rule will be given in the notes. I have also varied the method followed for townships formerly examined and described in the earlier publications. By placing the ordinary statistics of the village sites, more particularly those of the lot and concession of each, the owners' names, etc., in tabular form, and placing only special features in the descriptive notes, the work, it is hoped, will be rendered more convenient. The numbering of the sites begins, as in the earlier lists, at the northwest corner of the township, and passes to the southeast corner.

Indian Burials in Flos.

For this township there are six Huron bonepits reported, viz., at Nos. 9, 20, 22, 24, 29 and 36. It is worthy of note, and has a certain amount of significance, that in no case has a second bonepit been found, as is sometimes the case elsewhere in the Huron territory.

Patches of single graves or individual burials occur at two sites, viz., Nos. 39 and 42, which is fewer than in townships hitherto examined further east. This may be taken to signify that only a few of the sites in Flos were

those of Algonquin-speaking tribes, who generally adopted the practice of burying in single graves. It is clear that the burials were mostly those of Hurons who, as a rule, adopted the scaffold and bonepit mode of burial.

Early Indian Trails in Flos.

The main trail through Huronia from northwest to southeast passed across the northeast corner of Flos, coming out of Medonte. (See Report on Medonte.)

Across the northwest corner of the township, near Marl Lake, there was a trail of considerable importance passing from the Bear Nation, in Tiny Township, to the Tobacco Nation. From the occasional sites and relics found along its course, it would appear to have passed just within the range of sand hills through Southern Tiny, and near the outlet of the Nottawasaga River. The smooth sand beach may also have been utilized for transit in those days, as it has been in our own times. The trail was doubtless the one used by the Jesuit missionaries when passing to and fro, on their travels to the Tobacco Nation.

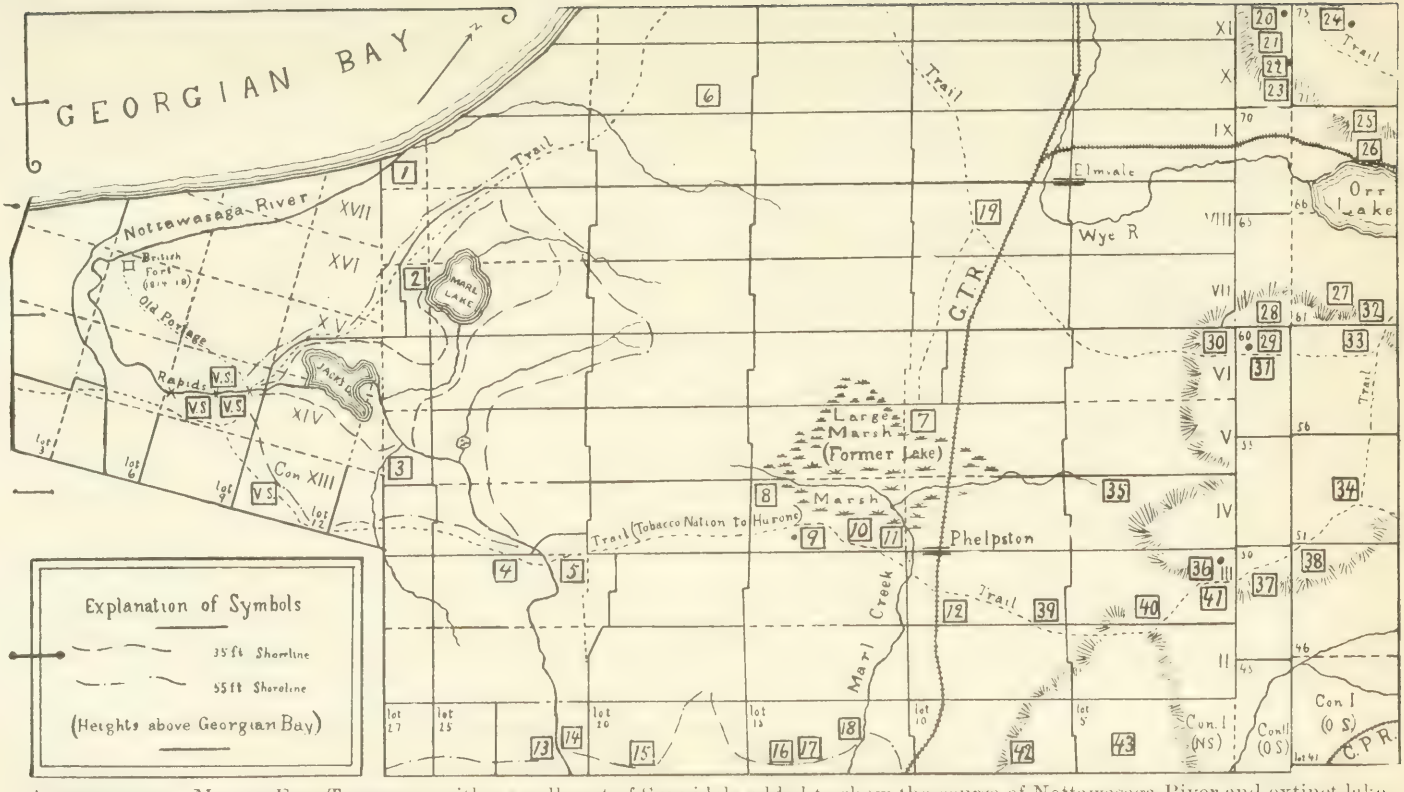
In the south side of the township, there was a great trail leading from "Upper" Flos, also to the Tobacco Nation. This ran from the Attignenonacs, who were located in Medonte township, while the one just mentioned as situated near Marl Lake, ran from the Bear Nation in Tiny. This Huron trail upon the southern ridge of the township, passed along its northerly edge,—a position more significant than it may at first sight appear to be It corresponds with the placing of so many sites on the northerly edges of the ridges in all the townships, that is, on the side from the direction in which the Iroquois lived. The harassings had their due effect upon the Hurons' choice of position for the trails upon the "shady" side of the ridges. As the narrowing valley or estuary of Marl Creek runs up from the south, quite as far north as the 3rd line, the trail in question evidently crossed the creek somewhere north of that line. As well as for keeping out of sight of the Iroquois, the Hurons must have deviated to the north here also, on account of the fishing and hunting advantages of the Phelpston Marsh. As in most other cases where popular traditions of the positions of the trails support the archaeological evidence, so in the case of this trail there is the double evidence to support it. Old John Kenice, the first chief by popular election of the Rama band, (deceased, May 28, 1902), used to make occasional visits for fishing to the "Big Dump," (*i.e.*, log slide), on the Nottawasaga River. He was reported as saying that the early Indians of the Dry Hills in the east had a trail across the south part of Flos to the Indians living along the Blue Mountains in the West, (*i.e.*, the Petuns, or Tobacco Nation), and that the trail passed near the Phelpston bonepit. (See site No. 9.) He was thus relating a tradition of his tribe as to the existence of the trail. Old Kenice and his family, on their way to the Nottawasaga River, passed along what was substantially the same trail or its modern equivalent, (viz., the 4th line), and they used to camp at the foot of the hill east of Fergusonvale, at the edge of the high ground. His mode of travelling was by horse-team and waggon, seemingly to us an up to-date way for an Ojibway, but not the way the Hurons and ancient "Tobacconists" travelled over the same trail in the seventeenth century, nor even their instructors, the Jesuits. They all,—modern as well as ancient,—followed the same trail. That part of Sunnidale which this trail crossed has several village sites, and in it many single relics are also found, the latter doubtless dropped by the Indians *en route*,—especially the stone axes and chisels.

Various evidences exist of another trail, viz., from the high ground of "Upper" Flos, to Cranberry Lake or Marsh in Tiny township. It was less significant than the others, and scarcely deserves to be put in the same class with the great Tobacco Nation trails. It would probably not be one of those followed by Champlain in 1615-6. The evidences of its existence consist chiefly in (1) isolated Indian relics, which are found along its course; (2) a village site (No. 19) beside it, at a place where the trail appeared to fork, and (3) the occurrence of an Indian trail down to modern times, along the line of which the early white settlers opened a bush road. There was a ridge of but slight elevation through the N. half of lot No. 9, concession 9, on which a hardwood bush afforded a convenient passage for this trail, while on both sides of it there was swampy ground.

LIST OF VILLAGE SITES IN FLOS.

Site No.	Lot No.	Concession.	Present owner or occupant (1906).	Former owners or occupants, who reported finds.	French relics.
1	S. hf. 26	9		John VanVlack	
2	N. hf. 26	7	Joseph Wetherall	Walter Little	F.
3	S. hf. 27	5	James Doran		
4	N. hf. 23	3	James Erwin	John Cullens	
5	N. hf. 21	3	The Canada Co.	Henry Parr	
6	E. hf. 17	10	William Trace	James Trace	
7	N. hf. 10	5	George Downey		
8	N. hf. 15	4	J. McGinnis	Bernard Kelly	
9	S. hf. 13	4	M. Kenney		
	S. hf. 14	4	Francis Monig	Henry Parr	
10	S. hf. 11	4	William McKernan		
	S. hf. 12	4	Philip Doyle		
11	S. hf. 11	4	William McKernan	(Distinct from No. 10)	
12	S.E. ¼ 9	3		James Moran	
13	S. hf. 22	1 N.S.	Jas. and Zeeman Rupert		
14	N. hf. 21	1 N.S.	Adelbert Bennett	James Keaney	
15	S. hf. 19	1 N.S.	Thomas Knupp	P. Culford, Frank Jacobs	
16	S.W. ¼ 14	1 N.S.		Edward Allsopp	
17	S.E. ¼ 14	1 N.S.	Fred Cole	Percy Kitching	
18	N.W. ¼ 12	1 N.S.	Albert E. Garrett		F.
19	N. hf. 8	8	George and Robert Gray	Charles Nixon	
20	75	2 O.S.	George French	Gabriel French, sr.	F.
21	74	2 O.S.	John French		F.
22	72	2 O.S.	James Bowman	Archibald Bowman	F.
23	71	2 O.S.	Charles Drinkill		
24	75	1 O.S.		(The Waverley Bonepit)	
25	E. hf. 70	1 O.S.	John Dwinell	John Rowley	F.
26	E. hf. 69	1 O.S.	John Macaulay	Angus Macaulay	F.
27	W. hf. 62	1 O.S.	Robert Martin		F.
28	61	2 O.S.	Robert Jamieson	Thomas Turner	
29	60	2 O.S.	Fred Turner	John Turner	
30	N. hf. 1	6	David C. Drysdale		
31	59	2 O.S.	William Preston		
32	61	1 O.S.		James Preston	
33	60	1 O.S.	James Hamilton	John Hamilton	F.
34	53	1 O.S.	James Scott	William Dunn	F.
	52	1 O.S.	David Jamieson	Jas. Dickie, Robt. Cleland	
35	N. hf. 4	4		Robt. Thurlow, I. Vollick	
36	N.W. ¼ 1	3	John H. Mulligan	Wm. Atkinson, P. Cleland	F.
37	49	2 O.S.	William Cumming		
38	W. hf. 50	1 O.S.	James Fred McClung	Gavin Turner	
39	S. hf. 6	3		Orsen J. Phelps	
40	S.W. ¼ 3	3	William Horan	John O'Hara	F.
41	S. hf. 1	3	William Horan	Edward O'Hara	
42	W. hf. 7	1 N.S.		Arthur Peacock	F.
43	S. hf. 4	1 N.S.	James Hays	Terence Needham	

The letters O.S., after a concession number, denote "Old Survey," and N.S., "New Survey."



ARCHÆOLOGICAL MAP OF FLOS TOWNSHIP, with a small part of Sunnidale added to show the course of Nottawasaga River and extinct lake beds. The numbers of the sites correspond with the numbers given in the text. The hills are marked along the 790ft. shoreline.

Notes on Village Sites of Flos.

No. 1. This is at the mouth of the Nottawasaga, on the south bank of the river. When the late John VanVlack lived here, he found numerous Indian relics in his garden. On the opposite point or bar between the river and the bay, there was once an old trading post, and the river banks hereabout would naturally be the camping ground for the Indians while trading. The remains of this trading post are indicated on a MS. map of a survey for the Northern Railway in the year 1836, the projected terminus of the railway having been at the mouth of this river. This was the first survey ever made for a railway in Canada, yet another route was subsequently adopted. There have been rapid changes in the shape of the ground on the bar, owing to the effects of the winds upon the sand and the work of the river's current, so that it might now be difficult to show the spot where the post stood. The MS. map is preserved, along with many other documents relating to the survey, in the Toronto Public Library. The Indian relics found at this site indicate the presence of some Indians who camped here before the period of white men.

No. 2. At the west side of Marl Lake, which is now partly drained. This appears to have been a frequent rendezvous of the early or prehistoric peoples, as well as of the Hurons. When this was the homestead of the late Walter Little, who was the first to settle here in 1880 and remove the forest, different members of his family found quantities of pottery fragments and other relics south of their dwelling house. Among these relics, two stone roller pestles and a large spear head of light colored chert indicated the presence of a people who lived here anterior to the Hurons of the historic period; while some clay pipes of well known patterns and an iron axe of French make showed that it had been, at a later period, a fishing village of the Hurons near the lake.

No. 3. There is a small stream near this site, flowing into the Nottawasaga River a short distance to the north. The Indian village that once stood here may have been a waterside village on the shore of the ancient inland lake of which Jack's lake is the remnant, its situation being at the place where the Nottawasaga entered the lake. The flat land which is flooded in springtime approaches the site.

No. 4. The most noteworthy feature of this site, is the abundance of stone axes and chisels found in its vicinity.

No. 5. This site is what is locally known as the "Big Dump," *i. e.*, log-slide, and numerous relics of the usual kinds have been found at it. It is situated at the head of the flat ground of the river, where the Nottawasaga emptied into the earlier lake expansion, and having this position it is significant. Modern Ojibway Indians in considerable numbers formerly camped here to fish on the river.

No. 6. On a sandy knoll at the southwest corner of the farm, with clay plains in its neighborhood. Much of the flat land hereabout consists of a stiff, brownish clay. The site was not extensive, evidently consisting of only a few camps, which were almost surrounded by shallow ravines. The late James Trace, who settled here in 1876, found various relics, including a stone pipe with two bowls.

No. 7. A pre-Huron site on the north side of the Phelpston Marsh. There is a drop in the land, or low cliff, of some four or five feet in height along the margin of the marsh, and this cliff was evidently the shore of a former inland lake. A few rods from the margin, the relics were found, including a stone gouge. Its location is where the old margin takes a long

bend to the east. On several farms in the vicinity, the farmers have found relics singly, some of which afford evidence of a considerable population in pre-Huron times.

No. 8. On the southeast part of this farm, near a swale. On clay ground, about 25 rods from the sand belt.

No. 9. Patches of blackened soil, with fragments of pottery, etc., showing continued residence at the place, occur along the roadside, opposite lot 13, and near these camp sites there are small ponds on the clay soil, where water could easily be obtained by the villagers. When the Kellys lived upon lot 14 (north half, concession 3), they found some relics. The position of these perhaps indicates the scaffold cemetery belonging to the village at the ponds or small marsh, as a bonepit was discovered across the road from the Kelly house in June, 1882, and was completely ransacked by numerous persons within a short time. The pit was circular and had a diameter of about 20 feet from brow to brow. A pine tree had grown within the circle of dirt thrown out when the pit was dug; this was at the west side, and a similar tree was at the east side, the latter, however, not so distinctly within the circle. It is situated about 60 rods due west from the permanent camps at the ponds. Wm. McKernan informed me that he found a skull in this pit in which were round holes, probably drilled, rather than bullet holes. This would doubtless be one of the drilled skulls, of which there are numerous instances in Huron burials. About four years after the discovery the writer placed on record in his memoranda a description of the opening of this pit, as follows: —

The Opening of a Huron Bonepit.

During the summer of 1882 some men found a large Indian ossuary, a few details of the discovery and excavation of which it will be advisable to record while the facts are still fresh in memory.

I visited the place as much as anyone else, or perhaps even more, the pit being situated but a short two miles from the Village of Phelpston, where I was then living, and I am, therefore, not without some preparation for the task, which should be performed by someone before the facts are forgotten.

The pit is situated on the south half of lot fourteen in the fourth concession of Flos; and, although the fourth concession line is not four rods away from it, and had been travelled for many years, nothing was known (publicly, at any rate), of the pit before 1882. In June of that year some men were engaged in cutting logs at the place, some boys being also with them, and they remarked the unnatural depression in the ground. A tradition of the neighborhood regarded it as the work of Indians, but for what purpose they used it, up to that time nobody seemed to have either known or cared. The boys who were present at the time, through curiosity, and to occupy their time turned over the sod in the hollow and exposed to view a mass of human bones.

The news of the discovery spread like wildfire within a few days. On the first Sunday following the event, the place swarmed with men and boys; and as some went away, other visitors came. The excavation of the grave was by no means systematic. One or two men went down into the hole and dug furiously until they became tired, when they were relieved by fresh diggers. They kept this up for the greater part of the day, and long before night the logs near the pit had on them long rows of grinning skulls. Those members of the crowd who took no part in the digging stood about in little groups, ridding themselves of all sorts of wild theories as to how the remains came to be put there. The favorite conjecture seemed to be that some terrible war

had taken place in olden times among the Indians, and that the dead had been jumbled together into the hole at the time. It is hardly necessary to say here that such a theory is utter nonsense; but about this, more subsequently. Notwithstanding the activity of the diggers, only a small part of the grave was excavated that day, upward of thirty perfect skulls having been unearthed, besides great numbers of fragments. The other bones of the bodies were mixed up pell mell, and no definite arrangement could be traced in the disposal of the remains, except that in almost all cases, especially those at the bottom of the pit, the face of the skull was turned downward. From a comparison of the measurements of the part of the grave excavated on that day with the unexcavated part (which was afterward turned over) in respect to the number of skulls found in the first portion, I am quite safe in saying that the grave contained the remains of at least two hundred persons, of both sexes and all ages. Perhaps three hundred is nearer the correct number when one takes account of the fragments, many of which were mixed with the perfect skulls.

Further excavation of the pit after that day was irregular. As the news of the discovery began to spread abroad beyond the limits of the immediate neighborhood, many persons curious to see the grave visited it from time to time, generally digging enough to unearth a few good skulls, and very often taking them away. Among the persons who thus visited the place may be mentioned the late Rev. J. W. Annis (then of Barrie), who took a deep interest in the pit and its contents. Another visitor was the late James M. Hunter, M.A., also of Barrie, whose interest in the Huron remains of this county was stimulated by the visit. (He subsequently made an English translation of part of the Jesuit Relations from this district, the translation having appeared posthumously in the Burrows' reprint of the Relations.) On the occasion of his visit to the pit, he obtained two representative skulls, one of which afterward, through Dr. Fred. P. Bremner (now of London, Eng.), was presented to the celebrated anatomist, Sir Wm. Turner, and is now on exhibition in the Medical Museum at Edinburgh.

The excavation of the pit continued during the greater part of the summer of 1882, until the most of it had been overturned.

When considered with reference to other ossuaries that have come to light throughout Ontario, and especially in this part of it, this one presents but few peculiarities. It is beyond doubt a relic of the Hurons who were finally driven from this district by the Iroquois in 1649. The soil of the place where the grave was found is very light and sandy,—such as could be removed without the employment of any tools that man in a higher state of civilization uses, and without much labor. The Hurons were accustomed to place their dead on scaffolds immediately after death. At regular intervals of time, the skeletons were gathered down from the scaffolds, the bones tied into bundles, and carried by relatives of the deceased to an appointed place, where the whole tribe congregated to celebrate a Feast of the Dead. They spent several days in feasting and performing rites, and all the remains of those who had died since the preceding Feast were thrown into one large hole. One of the Jesuit missionaries, Brebeuf, who labored in this part before the extermination of the Hurons, witnessed a Feast of the Dead in 1636, and he has left a record of the ceremony. (Relation, 1636, p. 131, Can. Ed'n.) The grave which he saw filled cannot be more than a few miles distant from the one we are speaking about.

From the great number of skeletons in the pit it was evident that bones and not bodies had been originally thrown in. Once, by removing aside some earth mixed with bone fragments, there was found a considerable bundle of

leg and arm bones lying parallel to each other like a bunch of sticks. (This was on the occasion of James M. Hunter's visit.) The thongs that bound them together when they were thrown in had perished long ago, but the surrounding soil had kept them in their places. This circumstance throws light upon the origin of the grave. A further proof of the Huron origin of the pit lies in the fact that no hair could be found. Hair does not decay much more rapidly than bones, and hence the bones only had been thrown into it at first. William McKearnen, who lives near, informed me that he found the skeleton of an Indian still possessing the hair undecayed, under a pine stump not many rods distant from the ossuary. This goes to prove that hair had it been cast into the pit when the bones were deposited there, would not have decayed so as to leave no trace of itself. The single Indian's skeleton may have been placed in its resting place at the time when the ossuary was filled, for it has been said that the chiefs were buried apart; or, sometimes the bodies of the recent dead were buried apart at the Feast of the Dead.

The skulls were of all shapes, none of them being very large. In general they were smaller than those of our own race. Two types seemed to preponderate, one short and round, the other long and narrow. They did not possess the high cheek bones that our present Indians have, and in this respect they resembled white people. The bones of the lower jaw were wanting in most cases.

It is impossible to account correctly for the origin of the grave by referring it to a war. The remains belonged to persons of all ages and of both sexes; and, as far as is known, no other mode of burial was adopted by the aborigines who populated this part so thickly during the first half of the seventeenth century. The great age of the pit is beyond all question. Two pine trees of good size had flourished within the circumference which was originally covered by the dirt thrown out to make room for the bones. The present Indians of the neighborhood are unable to give any account of its origin. In reply to my question an Indian told me that great wars had taken place here long ago. Since the time of the Hurons, no tribe has inhabited these parts in sufficient numbers to furnish dead bodies enough to fill such a cavity, and he referred no doubt to the war already mentioned, which resulted in the complete extirpation of the Hurons. Or he may have been repeating the current theory of the pit's origin. But I have found, on other occasions, the present race of Indians to possess a tradition of that war which he was only recalling.

The only implement of any kind known to have been found in the pit was a rough stone about six inches in length by two in breadth, very rudely made, and inclining to be wedge-shaped at one end. It was indeed a very rude attempt at implement making, and had I seen it anywhere else than in the hands of one of the diggers immediately after he found it, I should have passed it without noticing any artificiality in its formation. The visitors who saw it agreed in ascribing to it the uses of a "tool for skinning animals." It is not improbable that the centre of the grave had been ransacked by somebody several years ago, as the bones at that part of the pit had a more broken character than elsewhere; and if so, other trinkets might have been removed. But there is no record or tradition, so far as I ever heard, of such excavation prior to the one of 1882.

Although this relic of the extinct Hurons is highly valuable from an archaeological point of view, and as a curiosity it furnished a place of interest for all classes of people for a whole summer, and even longer, it is rather sad to reflect upon what became of it. Many of the perfect skulls were carried away as curios; and the adjacent ground became strewed with bones and

fragments, a few of the skulls having been unfeelingly crushed to atoms by the drivers of passing vehicles, though perhaps after nightfall when they could not see them. In most people there is more or less reverence for human bones, but this locality was unfortunate in being visited by some thoughtless persons who went so far as to decorate the surrounding stumps with skulls, in the hope of terrifying other persons who were too timid to look at such sights. We have heard of men who boasted that they had drunk water out of skulls, or, like Lord Byron, had converted a skull into a drinking goblet for wine: and persons of this kind were not absent on the present occasion. By such grim deeds of bravery, as they falsely believed them to be, and by the continual overturning of the contents of the ossuary, sad havoc was soon wrought in the large deposit of bones. Out of the large numbers of entire bones, little is left (in 1886) but fragments, and it would be almost impossible to find even one perfect skull. (Xmas Vacation, 1886.)

No. 10. The camps here were straggling or diffuse, and situated along an extinct lake ridge or cliff, facing the Phelpston Marsh. They appear to belong to Indians of various periods, from the earliest down to the time when iron implements, introduced by the whites, were in use among them, as an occasional iron tomahawk has been found. This camping site appears to have been much frequented by the aborigines, obviously for the purpose of hunting and fishing.

No. 11. Beside Marl Creek, near where it leaves the Phelpston Marsh. Some of the relics found here indicate the presence of a people anterior to the Hurons.

No. 12. The camps extended for about 40 rods, and were situated on clay soil near the source of a small stream.

No. 13. This, and the next four sites, are situated on a lake ridge, or marginal cliff of a large extinct inland lake in Vespra Township, the particulars of which will appear under that township. Its shores at these five places bear every appearance of having been occupied by aboriginal races anterior to the Hurons. This site is on the west side of the Nottawasaga River where it leaves the flat ground (once the bed of the ancient lake just mentioned) and enters the canyon which it has cut through the ridge dividing this lake basin from the one lower down stream. Stone axes, roller pestles, and gouges, (the two latter showing the presence of Pre-Huron tribes) have been found in abundance on the high banks of the river, above the canyon. The relics have all been found on the higher ground, and none on the flat made by the ancient lake, which is about 30 feet above the present surface of the river at this place. The soil is mostly a stiff brownish clay on the high parts above the canyon, and there is some gravel on the peak of land between the extinct lake shoreline and the river canyon. At this peak, where the river leaves the flat land, I saw many patches of black soil containing stones and fragments of boulders that seem to show the action of fire and traces of aboriginal occupation, although fragments of pottery were not mixed with the refuse as usual at aboriginal sites. Edward Richardson, whose land (west part of lot 22, concession 1) comes near to the river at one place, has found, like Mr. Rupert, roller pestles, stone axes and chisels, etc., in the vicinity of the river bank.

No. 14. On the opposite side of the Nottawasaga from the last mentioned site, the cut watercourse of the river being here quite wide, there is another site at which the evidences of occupation are less ancient, although the existence of pottery fragments here also is not well established. Successive owners have found arrow and spear heads, pipes, stone tomahawks, roller pestles, and other stone and bone utensils. The point which shows

most frequent occupation is the rising ground at the beginning of the canyon, distant a short way from the east bank of the river. The soil is chiefly clay, as on the west side.

No. 15. The first settler here (P. Culford) reported finds on the marginal cliff of the former lake shore, which here makes a bend into a bay on the north side. The position of the site is therefore on a point at the entrance to the cove.

No. 16. Mr. Allsopp found many stone axes and chisels, besides a pipe, a roller pestle, and other remains, on the highest ground on this farm, and he regarded the place as a camping ground at the time the ancient inland lake occupied the wide adjacent flat lands.

No. 17. Mr. Kitching, the former owner, found evidences of a prehistoric site here, on the rising ground, and part of the way up the hill. The relics found include two dozen or more stone axes and chisels, fragments, in small pieces, of coarse pottery with much crushed stone material, like quartz rock ground; also a native copper chisel about seven inches long, a large chert spear head, etc. At this place the high ground takes a northeasterly trend, making a recess in the north extremity of the extinct lake, into which Marl Creek flowed and still intersects. In other words, the position of this site is similar to that of No. 15, viz., at the west entrance to a bay.

No. 18. At the southwest corner of the land as described. The site is beside Marl Creek, and would be near its outlet into the extinct lake, if it was occupied during the continuance of that lake. But as evidences of the lake's shoreline are visible a little north of the site, i.e., outside of it, the camps must have been inhabited at a late stage in the decline of its surface. An iron tomahawk found here suggests post-French contact, although this specimen may have been a superposed, i.e., a subsequent, relic.

No. 19. This site, at which relics of the usual kinds were found, is beside a spring stream. It is in the line of a trail from Cranberry Marsh in Tiny to the high ground in the east of Flos, and from here another branch seems to have passed to the Phelpston Marsh. Its position is therefore at an essential point.

No. 20. Described as No. 46 in the writer's report on Tiny, as it is situated within the same physical area as sites in the Township of Tiny.

No. 21. On the southeast part of lot No. 74, on the very highest part of French's Hill, the name given to this elevated tract of ground. This was probably a corn village, as many cornhills were observed in this vicinity when the land was in the forest, and its position at a distance from a supply of spring water would lend support to this view. Relics of the usual kinds, including numerous iron tomahawks, were found.

No. 22. This has already been described as No. 48, Township of Tiny, to which the locality is contiguous. The late Archibald Bowman found the bone pit in hollow ground a short way north of his dwelling house, while digging a cellar for a stable. A local archaeologist, Dr. J. B. McClinton of Elmvale, devoted considerable attention to this relic of the Hurons, and has furnished some interesting particulars in regard to it. A short way south of the place, camps have been found, and these might have been the village to which the pit belonged. (See next number.)

No. 23. On top of a shore cliff of an extinct lake margin, at the base of which there is a supply of spring water. It was probably the village of which the Bowman ossuary (see last number) was the cemetery. It is beside the 2nd line, at what is known as Hunter's Clearing, from an early settler who cleared the ground, on which there was considerable debris of pottery

fragments, etc. At the gravel pit a little north, were also found pottery fragments, though the latter may have been the scaffold cemetery. The Clearing just mentioned is now overgrown again with second growth trees. Although the bonepit mentioned under No. 22 probably belonged to this village, I have retained the two features under separate numbers until more definite proof reaches us, as I have before had to do in similar cases, because the two may have belonged to distinct periods, notwithstanding their closeness to each other.

No. 24. The Waverley bonepit, described as No. 47, Tiny. A local report states that the number of crania obtained by the Toronto expedition to this place was 24.

No. 25. This site is near the Rowley homestead, and the plot on which relics have been found most abundantly has been cleared for many years. Mr. Dwinell found fragments of a brass kettle at a depth of two feet, when digging a post hole upon the site.

No. 26. The site is half way across the lot, on a ridge that ends at Orr Lake. Further particulars of the site may be found under No. 49, Tiny,—the number formerly assigned to it, as it was, along with three others then described, contiguous to the area of Tiny, where Huron remains of the historic period are plentiful.

No. 27. Its position is at the foot of a considerable hill, where there are springs to furnish a supply of fresh water. Amongst relics of aboriginal make, it yielded some iron tomahawks of French make, and evidently was a Huron site of the historic period.

No. 28. In the early years after the clearing of the farm, relics of the usual kinds were found on the westerly high ground. The bonepit once found on the lot south of this one may have belonged to the same period.

No. 29. This site is on rising ground, with a northerly outlook, and near it the surface drainage water collects and lies in a pond or swale. On the higher ground, when he first cleared the land, the elder Mr. Turner observed cornhills, but the cultivation of the land has obliterated these relics. At a distance of about 40 rods from the camps, many years ago a bonepit was found and opened. On the bank of earth cast out from the pit to form it, a tree had grown, in the growth of which Geo. Caston of Craighurst, who formerly paid close attention to the pit and its surroundings, counted 150 rings. No iron tomahawks of French make have been found here.

No. 30. In a field adjoining the 7th line the occupants have found relics of the usual kinds. The position of this site is near the brink of the high ground, and has a wide view in a westerly direction.

No. 31. The position of this site is toward the west part of the farm. The occupants have found relics of the usual kinds.

No. 32. At the northeasterly extremity of the high ground of the Hillsdale ridge. A trail doubtless left the high ground at this point.

No. 33. Among the relics reported from this site were iron tomahawks of French make.

No. 34. This site is on the boundary of lots 52 and 53, parts being situated on each, and it is nearer the easterly end of the land than the westerly, and some distance from the Penetanguishene Road. There is a spring at it, producing wet ground, where a supply of fresh water could be had. It covers an area of about two acres, about half on each farm, and the site is too small, therefore, and the iron relics found too few to give any support to the theory that it was St. Joseph, or Teanaustaye.

No. 35. The accumulation of soil above the remains was considerable in some parts of this site, as the late Jas. L. Brennan of Phelpston, while

excavating for the foundation of John A. Coates' shingle mill in 1882, found fragments of figured pottery at a depth of four feet below the surface. Many fragments appeared on the surface also. A stream (called Marley's Creek) takes its rise in a fine spring near this site. It was an important site, and the settlers of the neighborhood formerly paid some attention to it. No evidences of fortification have been found, and it was probably unfortified, as higher ground occurs near it.

No. 36. The successive occupants of the farm have found camps, which yielded the usual remains. A short distance away, a lad named John O'Hara, who lived in the vicinity, discovered in 1848 a bonepit, which in course of time became the most famous of the wonders of the neighborhood. Fifty-six years later, the writer was fortunate enough to obtain from Mr. O'Hara himself the particulars of the discovery. He was looking for their cows in the woods at the time, and came upon the curious hole in the ground which aroused his curiosity, as it was a deep depression in the surface of the land. He marked its position by breaking a line of little saplings as he went away from it, thus making a trail that would lead him back to the spot when he should return. The device shows skill in the woods such as every person accustomed to forest life has to possess. He informed me that there were two pits, one of which yielded great numbers of bones. But the contents of the other pit, whatever it might have been, had been burnt, and they came upon nothing but black substances in it—no bones, at any rate. (It had evidently been a cache of some organic materials, nearly all of which had become carbonized with age.) Peter Cleland, who kept a store near Hillsdale, owned the farm at the time of the discovery, and if Father Martin, who visited the locality within a few years after, makes any reference to a Mr. Cleland, in his MS. notes, this is the man who is meant, and this the site. The first Sunday after he found the pit, many men and women came to see it, and there was digging and delving in it without end. It is said that some of the human bones found in it had mammoth proportions, while a few trinkets were also found in it. There were ashbeds on the easterly part of this lot (the homestead of George Richardson), and some remains were also found on the adjoining lot west (viz., lot 2), formerly Wm. Horan's farm.

No. 37. Near the west part of the farm. The marginal cliff of the strong shoreline at 790 ft. elevation is not far distant from the site.

No. 38. A few relics of the usual kinds were found here when Gavin Turner was the occupant of the farm, but no iron ones have been reported.

No. 39. The site covers a space of upwards of half an acre, in which there are ashbeds mixed with fragments of pottery, etc. Other patches of refuse containing fragments of well figured pottery occur in the northeast corner of lot 6, concession 2, i.e., across the third line from the other part of the site. As present appearances indicate, there is no spring water near the site, from which a supply of water could be had by the villagers, although springs which might have existed here at the time may have gone dry. A little way south at the rising ground there are some traces of graves. Going up the hill, I observed at the roadside the bones of an Indian minus the skull. They were falling out of the loose sand from beneath a large pine stump, the exposure having been made by cutting the road through a small rise of ground. It is said that two skulls were once found at this place, which has the appearance of being the cemetery of the village a little way north.

No. 40. Mr. O'Hara lived here for more than forty years, and frequently found pottery fragments and other relics near a spring on the low ground at the rear of the farm. Among the relics there was an iron or steel knife of early French make.

No. 41. This site may be a part of No. 36, but as it is on low ground, and apparently was unfortified, while No. 36 is on top of the hill, at some distance, and was most probably fortified, it may be as well to regard them as separate villages, as they may belong to two distinct periods of time. The occupants have found the usual fragments of pottery, pipes, etc., on this site, but not so abundantly as on the site on the hill (No. 36). There are large scooped basins in the low ground on this farm, and ice reefs, in regard to which there is prevalent in the neighborhood the usual belief that they have an Indian origin, but they had more probably a natural origin from ice and water. There is a water supply here,—a small creek which flows southeastward. P. Holleran, when a boy, found on this farm a Spanish copper coin. Unfortunately the second figure of the date seems to be defaced, but it is probably 8, as one side of the coin has the image and name of Isabel II. Jas. McGinnis on the adjoining farm has found relics of the usual kinds on the part of their farm adjacent to the site.

No. 42. At what is known as the Flos Picnic Ground. Water lies in a pond here all the year round, and might have been used for their supply by the aborigines, whose camps are here. A patch of single graves is reported in connection with the site.

No. 43. Its position is not on a high spot, and does not imply defence; yet the highest ground of this ridge occurs here, so it was perhaps a corn village. There is a supply of water near it.

THE VILLAGE SITES OF VESPRA.

While the Township of Flos touches, at its northwest corner, the shores of Georgian Bay, the next township south (viz., Vespra) completes the span from lake to lake by having a small frontage at its southeast corner on the waters of Lake Simcoe. This small frontage is all included within the limits of the Town of Barrie; but for the territorial purposes required in this article, it may be regarded as a part of Vespra, with which it was originally surveyed.

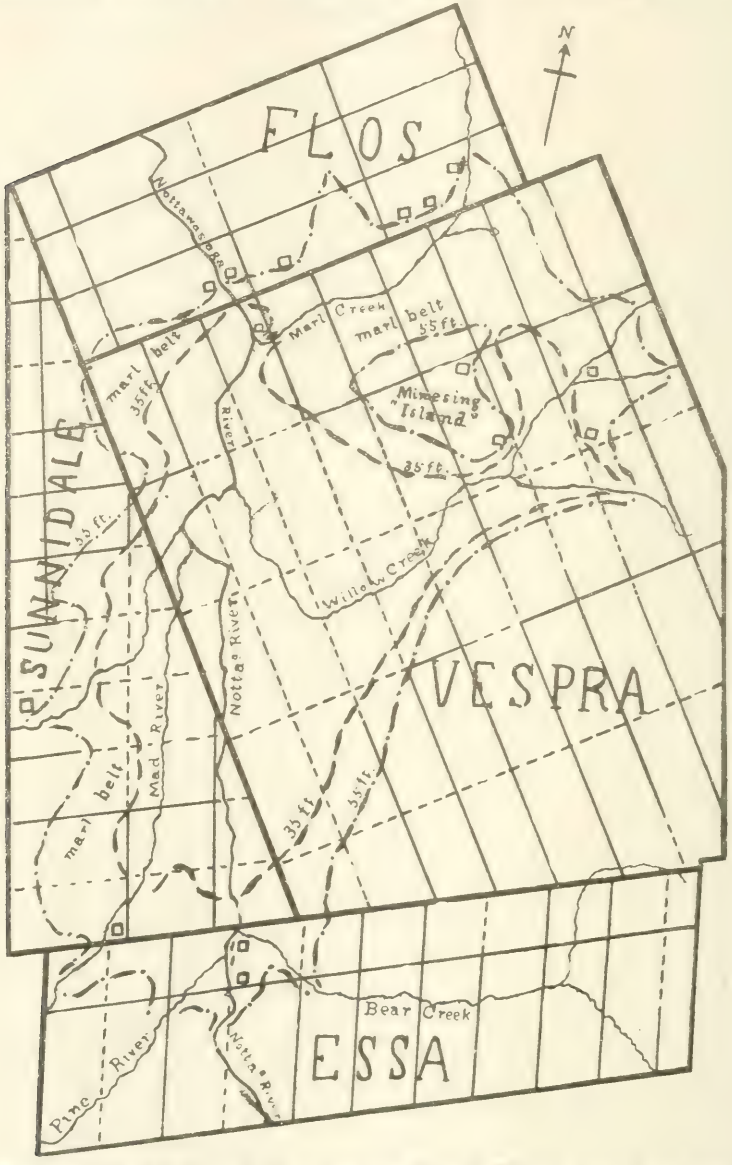
Physical Features of the Township.

Vespra has the physical features of Flos repeated, viz., in three stages; (1) a tract of hilly ground along the east and south sides; (2) the Nottawasaga River with low ground along the west side; and (3) an intermediate belt between them having, however, but trifling interest, archaeologically. The west and northwest parts of the township near the Nottawasaga are very low, and lay until a recent time under a lake, or lake-expansion of the river. This inland lake covered a third of Vespra township and small parts of three others,—Flos, Sunnidale and Essa. Only a narrow strip of land three or four miles wide (in Flos township) separated this inland lake from the ancient waters of Georgian Bay, which came further south than they do now. We can scarcely call this lake "prehistoric" because while there is no record of it preserved in the maps and narratives of the early white travellers, the Indians have preserved to this day a tradition or oral record of its former existence, their name "Minesing" (meaning "island") for the large island in it being still in use. Its abandoned shores all around the once-flooded space are well marked, and several village sites bear evidence that they stood on its margin when the lake existed, all of which were villages of the earlier or gouge-using people. Elsewhere, gouges are always found beside waters of lakes and rivers, and in the present instance, although the sites where the gouges are found are now far from any shores, there is no exception to the rule, as the waters which once were beside them have since retreated. It may be added that no mounds have yet been identified anywhere around these extinct shorelines.

Where the Nottawasaga leaves the inland flat ground at Edenvale there is a terrace on each side of the river at about 20 ft. above the normal surface of the water, or about 35 ft. above Georgian Bay. Another terrace having a broader plain occurs about twenty feet higher than the last named. These terraces correspond in altitude with the similar abandoned shorelines in the Flos basin lower down the river, as I have already pointed out in the description of that township. The space between the abandoned beaches at 35 ft. and 55 ft. above Georgian Bay, which is also the outermost belt of the flat ground or lake-bed, whose shape the accompanying map shows in detail, is now covered on the surface of the ground by dry beds of marl mixed with freshwater shells, deposits from the ancient lake which overlaid the space in question. These marl and shell deposits are so abundant that they indicate a warmer climate at the time when they were formed a few centuries ago, and they resemble the same kinds of marl formations at the same altitude in Flos, which were mentioned in our description of that township. This marl belt is more strongly pronounced in what were the bays of the ancient lake. The inner rim of the Marl Belt, as shown upon the maps that appear herewith, indicates the boundaries of a lake that existed probably in the earliest Huron times. At that time the space was covered permanently as a lake all the year round, and it is still flooded land to this

day, the lake existing for a temporary period in springtime. Its bounds extend almost to the lines of the former shore as marked at about 35 feet, and its lake-bed is silted over with mud, covering the marl deposits of earlier times.

At the present day, with the spring freshets and the resulting rise of the Nottawasaga, there is a flooding of this flat land along the river's bor-



Map showing outlines of the bed of an extinct lake in Vespra and three other adjacent townships. The small squares, marked on its shorelines, indicate fifteen Indian village sites inhabited when water covered the area. (See also maps of Flos and Vespra.)

ders, and for some distance into the lowest parts of the adjacent territory, lasting for some weeks. The space actually flooded I have estimated to be 16,000 acres, or, say, 25 square miles. Outside of this, the Marl Belt, which

is unflooded, might bring the total acreage of flat land up to 30,000 acres. Sir Sandford Fleming estimated in 1853 that in some seasons nearly 25,000 acres are covered with water (Canadian Journal, vol. I., 1st series, p. 223).

This flooding is a prolific source of litigation and agitation. For a few days in the spring of 1904 the inundation of the Nottawasaga raised the waters about 15 feet, which was far above their normal summer level, and the flooded space covered the 16,000 acres which I have reckoned as its maximum extent. This unusual rise was caused by the rapid melting of the snows, the rapid flowing off to the basin under consideration, and rains falling at the same time in some parts of the Valley. This unexpected inundation compelled some families to live upstairs for awhile, and to go from their houses to their barns in boats, one family having to pass over a depth of at least five feet of water in this way. On that occasion the flooded space was also wider than it had been for 17 years, being about five miles broad at its widest part, viz., in the neighborhood of Willow Creek.

Since the removal of the forest from the greater part of the Nottawasaga Valley, and the removal of woody obstructions from the branch streams, there is naturally more rapid flooding in the spring when the water rises very fast. This opening up of watercourses into the main river from various directions has had its due effect upon the sudden flooding of the large inner basin. This was the effect of the artificial drainage of Marl Creek from Phelpston Marsh in 1897, resulting in the lawsuit of Priest v. Flos, the writ in which case was issued in August, 1899, and the case finally tried before the Ontario Court of Appeal Nov., 1900. A similar result followed the cleaning out of the Mad River, over which there was an arbitration. These cases show the aggravated effects produced upon the spring floodings by improved drainage and clearing the land. In the lowest parts, beside the Nottawasaga, the inundated lands extend for several miles on each side, and on these alluvial lands and inundations are sometimes attended with serious inconvenience and loss to the settlers, who are still few in number.

The whole flat (formerly occupied by the inland lake) is extensively wooded, (except in the few places cleared by the settlers) with forests of spruce, balsam, ash, elm, etc. Willows are numerous near some of the branch rivers and streams. In the westerly parts of the flat, (i.e., in Sunnidale Township), there is much black ash timber, and a large elm forest occurs near the Willow Creek, concession 13, Vespra. Some marshy parts of the flat lands, like the ruins of Babylon, are still "a possession for the bittern," and the flooded land generally is also the haunt of many birds of the wading class—plovers, herons, cranes—which haunt the margins of the swamps in considerable numbers.

The Minesing eminence, or "Island," during the existence of this inland lake, or lake-expansion of the Nottawasaga, contained about 4 square miles, or, say, 2,500 acres, and this hill is all cleared now and tilled. It was not an island much later than the end of the marl-forming period, but with the subsidence of the water, it coalesced with the mainland. Some aboriginal village sites on this Minesing "island" were occupied when the lake surrounded the hill, there being evidences that both the Hurons and the earlier gouge-using people occupied the island at successive periods. Modern Indians of this district have a tradition that the lake we have described occupied the surrounding flat in the time of their forefathers, their name "Minesing" meaning "the island," or "the place at the island." We may accept this etymology of the word Minesing as good evidence that

the ancestors of the modern aboriginal inhabitants were living in the district when the waters of this inland lake covered the flat lands, some parts of which are now well-cultivated farms; and that the lake reached to the sites of many of the lakeside villages which we now find fringing its extinct shores.

The Willow Creek has a few noteworthy features that deserve a remark or two in this place. First, the very tortuous course of its channel through the alluvial flat lands attracts attention, this being the usual habit of rivers in very flat ground. Another singular feature is to be seen in connection with this creek on its way to the lowest ground, viz., some of the land a few hundred yards from the banks of the creek is lower than the surface of the creek itself. Higher up in its course, viz., from Little Lake downward for a few miles, the Willow Creek flows through a deep watercourse worn out by the stream itself. The Little Lake just mentioned, although less than two miles from the western arm of Lake Simcoe, empties its surplus water into Georgian Bay by the way of one branch of Willow Creek. This branch comes out of Oro Township, and after forming the Little Lake, which we may regard as merely a lake expansion of the creek itself, it then flows through a deep valley which has bounding hills on both sides rising about 250 feet high, and is about two miles wide, being a deep rift in the ridges at this place.

A ridge having its westerly end near Grenfel, and extending across the south side of the township, is a conspicuous feature. It reaches an elevation of more than 1,000 feet above the sea level in a few places, or 400 feet above the surrounding flat land. In the succeeding paragraphs I shall refer to this as the Grenfel Ridge.

The easterly parts of the township are also hilly. In the north part, the end of the ridge comes out of the Township of Flos, but it has no archaeological features of much significance beyond a few village sites of only ordinary importance. The strong shoreline at 790 feet above sea level girdles all these higher hills and ridges in Vespra, except the Minesing hill or "island," whose top was washed off or denuded by the ancient water body whose surface had that altitude.

One or two features of the topography of Vespra as it is affected by the modern survey of the township remain to be noticed. Concessions I. and II. are in the Old Survey, and the numbering of the lots therein is from south to north. In the remaining concessions of the township the numbering of the lots is from north to south.

The Village Sites in Vespra.

Vespra is interesting because a number of its village sites take us back to prehistoric times, before the arrival of the white man. Although its sites, as a rule, are not large, they occupy a significant place in the evolution of the Huron Nation, to which most of them belonged. The physical features of the township are such that they show better than any other township does the law of distribution of Huron sites, which are found on the high ground and are absent from the low ground. And still further, it will be observed that the Huron sites occupy positions on the northerly or rear portions of the ridges, as we found in the other townships. As their remains show, they carefully avoided showing the smoke of their villages along the southerly faces of the ridges, as they would be a mark (if thus placed) to anyone coming from the direction of the Iroquois in New York State.

There is a group of small village sites, however, on the Grenfel ridge, which, while they are situated on the higher eminences away from the water bodies, and quite inland, (the situation, in fact, which is distinctly peculiar to the Hurons), they may therefore seem to be an exception to the rule of position on the northerly faces. But they belong to a different period from that to which the others belong. The ornamentation of the pipes and pottery found at these sites is to some extent Huronian; yet the sites have some evidences of having an antiquity equal to or probably greater than that of the Hurons of the historic period. These small sites on the Grenfel ridge resemble some in the Township of Innisfil in a few respects, iron relics being scarce in both groups. It may be conjectured by some that the sites of both groups were temporary hunting camps of the Hurons who lived in the townships further north, but this theory is not tenable as they show signs of having been permanently occupied. In comparison with the sites similarly placed along the south edge of the high ground in the south part of Flos, which fronted the extinct lake, the unfortified sites along the south edge of the Grenfel ridge bear very few resemblances to the first named. Both groups have yielded gouges, however, Nos. 29, 40 and 42 in Vespra having yielded specimens of these implements, and a few gorgets have also been found in the vicinity of the Vespra group.

The sites along the north side of the Grenfel ridge, Nos. 45 to 49, belonged to Hurons of the early class, and they were probably fortified as they are situated on eminences which were evidently chosen for the natural protection they afforded. For their sites the early Hurons utilized almost every peak of land along the hills fronting Little Lake and Willow Creek upon the north edge as well as the south edge of the valley. The Huron tribes who inhabited the villages upon either side of the valley had French implements and ornaments in a very limited quantity, as these kinds of relics are scarce at their sites, and in many cases are wholly wanting. Accordingly, they seem to have lived here before the French came, or about that time, but not before the outbreak of the feud with the Iroquois, which was already an issue when Champlain visited the Hurons of this district in 1615. Along both sides of the Willow Creek Valley, facing the stream, amongst the numerous village and camp sites (Nos. 18 to 25, and Nos. 45 to 50) many ravines furrow the sides of the high ridges.

Vespra villages of the Pre-Huron class show no evidences of fortification. The villages that, from their positions appear to belong to the palisaded class were Nos. 5, 19, 37, 45, 46, 47, 48 49, 54; and these (except No. 37) were all "early Huron," as their relics show.

There can be no doubt that nearly all the Huron sites in Vespra belonged to the early period, and were occupied by one and the same people. This period was evidently before or about the time of the arrival of the French, as iron relics are absent except in very small quantities. In all other respects the Vespra villages are like the villages in the townships north and east of this one, and for each of which I have already shown the late period to which they belonged from the high percentages of European relics found at them. The two kinds of villages differ from each other only in the absence of iron and other European relics, the articles of native make being the same in both. Altogether, they represent the consecutive abodes of the same people, covering the space between the lakes from south to north. And the circumstances connected with the Vespra sites throw further light upon the duration of hostilities with the Iroquois before Champlain's time, show-

ing that considerable time must have elapsed in a period of warfare before he arrived upon the scene, only, alas, to make it worse.

Excluding from the 54 village sites one that was evidently modern (viz., No. 1) and three Pre-Huron sites (Nos. 2, 3, 4,), of the remaining 50 sites ten (or 20 per cent.) have yielded French relics in small quantities, and only a single article in most of the ten cases. In several instances where only a single iron relic was found, the finds were suspiciously suggestive of having been articles lost upon the older sites by stray travellers over the same ground, that is, the lost articles had been "superposed." Altogether, in the entire township no more iron relics have been found than we might expect to find owing to the passage of so many Indians over the same ground during the centuries after the white man's arrival, and such as would possess iron implements which they might occasionally lose on or near the earlier sites. There is certainly a wide difference between this feature of Vespra and the eighty or ninety per cent. which it is usual to find in those townships in the north where Hurons of the later, or iron, period lived. So many Huron sites in Vespra, and so many similar ones in the townships farther south, are without iron relics (and were therefore probably prehistoric), that we are forced to conclude that the Hurons had lived in this district for a long time before Champlain and the early French traders found them out.

From archaeological evidence (apart from French objects), it is possible to indicate definitely the distinction between Huron and Pre-Huron sites. There is a clear distinction between the two in relation to the high dry land and water bodies, the Hurons having built their villages upon the former, while the Pre-Hurons built beside the latter. Sites which do not yield French relics to serve as a guide in determining whether they belonged to Hurons or not, yet yield native articles, especially pottery and pipes, which show by their patterns that they were "Huron," and the various patterns or styles in vogue among them make this quite easy in a large percentage of cases. In clay pipes, for example, the Belt pattern largely preponderates at Huron sites; and elsewhere (Report on Medonte) I suggested that the Huron tribe that used pipes with this decoration were what the Jesuits knew and named the "Cord" Nation.

Spear heads were more common at the Nottawasaga River sites, in both Flos and Vespra, and at other fishing places, than at the inland sites. Large flint spear heads were not much in use among Indians of historic times, the flints found in connection with Huron sites being chiefly small ones, that is, arrow-heads. The larger flints appear to have gone out of use by the time the Hurons arrived in the district. Our results and conclusions in this particular coincide with those of Rev. W. M. Beauchamp in connection with the Iroquois sites in New York State (see his "Aboriginal Chipped Stone Implements of New York," p. 39) except that I have been led to regard the earlier races who used the large flints as probably Algonquin-speaking peoples who dwelt in the district prior to the Hurons.

The distribution of gouges is also instructive, as they occur on sites beside water bodies, and likewise on a few of the earliest Huron, i.e., inland, sites, no instance having come to my notice or being on record in the early travellers and writers of a gouge having been found in connection with any Huron site of the historic period along with iron relics. A question naturally arises—if we find gouges upon the earliest Huron sites, may we not expect to find them upon the later (historic) sites, notwithstanding the fact that they are not mentioned by the Jesuits or other early writers? The answer is—had they been in use among the early Hurons themselves we might ex-

pect to find them on later Huron sites too, but apparently their use was among a people with whom the early Hurons only came in contact, and Hurons themselves did not necessarily use or adopt them. Under such circumstances, stray specimens might find their way into the early Huron sites, and not be found upon the sites of their descendants. The absence of gouges from Huron sites resembles the condition of things on the Iroquois sites of New York State, according to the Rev. W. M. Beauchamp, who says:—"They were unknown to the Iroquois." (Polished Stone Articles used by the N. Y. Aborigines, p. 20).

The descriptions of the Vespra village sites in the following pages will further illustrate the features and principles which I have now explained in general terms.

Indian Burials in Vespra.

There are seven bonepits reported at three villages, viz., at Nos. 19, 52 (3), 53 (3), all three places being on or near the trail to the Neutrals. There are evidences of at least three pits at each of the two last mentioned sites. A patch of single graves or individual burials occurred at No. 34, and it appeared to be very ancient. It probably belonged to the early Huron class, as there are early Huron sites in its vicinity, but it also shows the close resemblance of those people with the early Algonquins who practiced the custom of single-burial. There were isolated burials at sites Nos. 16, 45, 47, 49, 52 and 53, but the examples found at these places were interred without regard to a cemetery, in a random sort of way, and all were at villages which I have, on other grounds, classified as "early Huron."

Holes bored in the Indian skulls, of which there have been accounts of many instances brought to light from the Huron graves and ossuaries, but only a few examples actually saved, and of which a short account will be useful here, as Vespra has yielded numerous examples, show a distinctly national mortuary custom of the Hurons. The writer believes that it is an explanation of, or at least a reference to, the burial practice, that occurs in a passage (Relation, 1636, p. 105, Canadian edition) written by Brebeuf, to whom we are indebted for so many instructive observations on Huron customs. He says: "Upon the same road (i.e., the road to the Tobacco Nation) before arriving at the village, one finds a cabin where dwells a certain person named Oscotarach, or Head-piercer, who draws the brains from the heads of the dead, and looks after them." The holes we find in some of the skulls, when they are brought to light at the present day, are doubtless some of Oscotarach's wierd performances. That professional gentleman, with very little experimenting, would soon find that the brains would come out at the axis hole much better if another hole would let in the air, with the germs of putrefaction. His explanation of the circumstance might not be along the lines of the mechanical theories of aerodynamics, or of the modern germ theory, but practice always, or nearly always, precedes theory; and savages are invariably found in possession of brains enough to adopt customs based upon the laws of nature. We may therefore regard the holes drilled into the skulls as the outcome of an extravagant mortuary custom of the Hurons, whose Feast of the Dead itself was one of the most unique of all known mortuary customs among savage nations.

Early Indian Trails in Vespra.

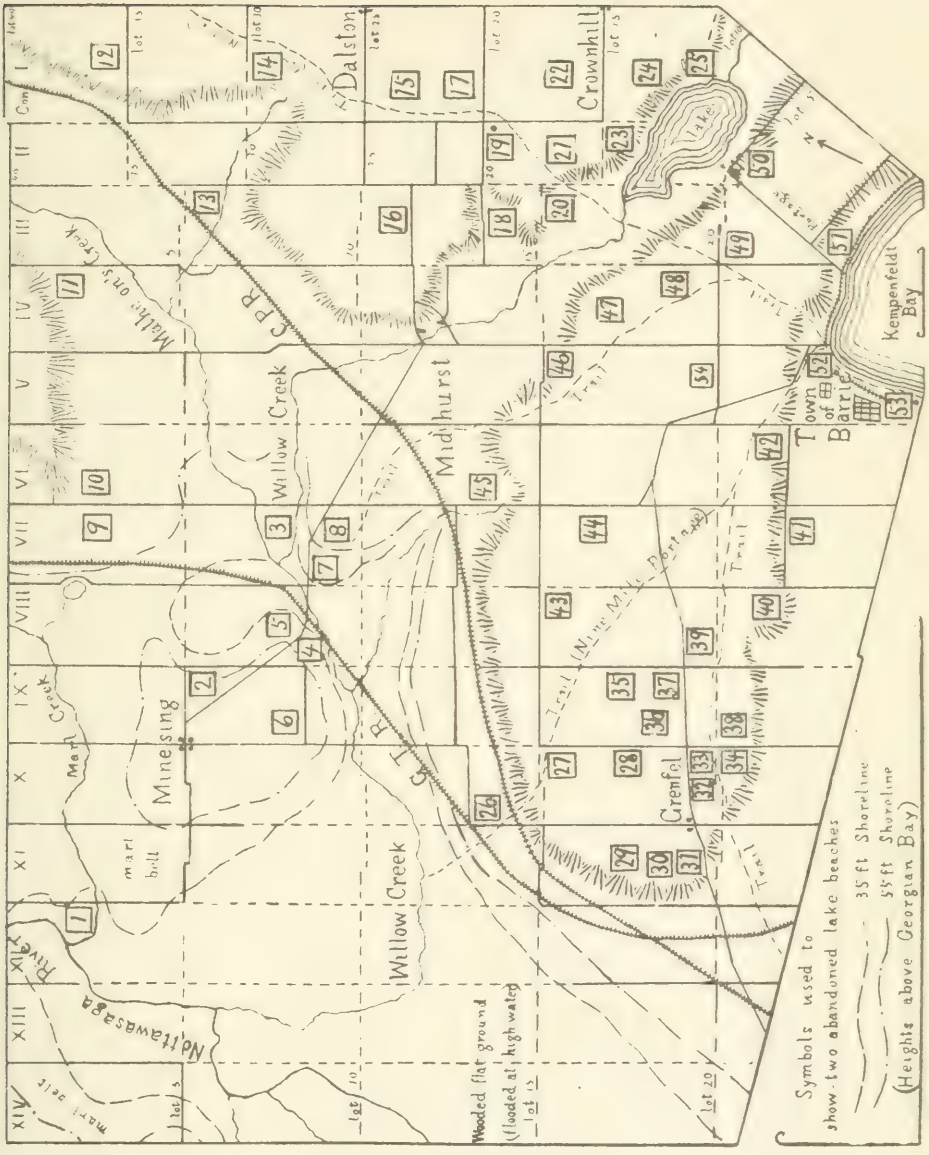
The trail to the Neutrals stands first in order of importance. Its general course is nearly due north and south through the township, which it

crossed passing near its east side, and beside the head of Kempenfeldt Bay. Some marshes occupied the low ground along the south side of the Grenfel Ridge, and made the trail to the Neutrals pass necessarily beside the head of Kempenfeldt Bay, which had a fine sandy beach that was much used for travelling purposes down to comparatively recent times.

The Nine Mile Portage became the most useful of all the Vespra trails to the white man, although it is not evident that the Hurons had used it much. It crossed the plateau from the head of Kempenfeldt Bay to the Willow Creek, and was a canoe portage of later Algonquins, like the Coldwater trail, each being a link in the great waterways rather than forest trails among villages. In the History of Simcoe County I have described this portage at some length, and need not enter into full details here. It is probable that the Hurons used the Minesing trail more than they used this one.

The present Minesing Road (formerly called Lount's Road) follows a trail of the modern Indians to Minesing, and it was evidently used by early Indians too, as many clay pipes having the distinctly Huron pattern, which I have called the Belt pattern, have been found at site No. 5 upon the Minesing hill. This shows that the Hurons occupied the site, and had a trail thither by the approach at No. 8, whether the flat ground was then occupied by a water body or not. Before the Hurons came, some tribes occupied the Minesing "island," as, among other evidences, gouges have been found at the earlier sites, thus showing the unmistakable presence of at least one earlier tribe.

There is, lastly, the trail that became the Sunnidale Road (from the head of Kempenfeldt Bay to the Nottawasaga River), passing near the southerly edge of the Grenfel ridge all the way. It branched off the Nine Mile Portage in the Sixth Concession, and thereafter held a course of its own, westward.



ARCHÆOLOGICAL MAP OF VESPRA TOWNSHIP.

The numbers of the sites on the map correspond with the numbers in the text. The outlines of the hills are those with bases at the 790 ft. shoreline.

List of Village Sites in Vespra.

Site No.	Lot No.	Concession	Present owner or occupant (1906)	Former owners or occupants who reported finds	French relics.
1	2	12	John Campbell		modern.
2	E. hf. 6	9	Isaac J. Middleton	Richard Dixon, Samuel Jacobs	
3	E. hf. 8	7	Charles Littlejohn		
4	W. hf. 9	8	Timothy S. Morton	O. F. Wright, Charles Wright	
5	W. hf. 8	8	Robert Stewart	Joseph Orchard	F.
6	W. hf. 8	9	Joseph Chapelle	Geo. Plowright, Ephriam English	
7	W. hf. 9	7	Thomas Elliott	James Corrigan	
8	E. hf. 10	7		Charles F. Wattie	
9	E. hf. 3	7	James Muir		F.
10	W. hf. 3	6	David Donnelly		
11	E. hf. 2	4	Matthew Kennedy		
12	N.W. ¼ 36	1	James Williams		
13	E. hf. 6	3	Edward Shanacy		
14	30	1		Thomas Spence, sr.,	
15	24	1	Alfred Salisbury		F.
16	E. hf. 12	3	Arthur Garvin	David Garvin	
17	W. hf. 21	1	Joseph Bonney	Samuel Brown	
18	N.E. ¼ 14	3	James Pearce	Thomas Wright, Robert Poole	
19	20	2	George M. Coutts	Duncan Coutts	F.
20	E. hf. 16	3	Henry Sutton		
21	17	2	Thomas Sutton	Richard Monteith	
22	17	1		Wellington Partridge	
23	15	2	George Shannon	David Peacock	
24	S. hf. 14	1	James Rix	James Wickens	
25	10	1	Joseph Caldwell		
26	W. hf. 14	10		William Dempster	
27	E. hf. 16	10	Joseph McKernan	John McKernan	F.
28	E. hf. 18	10		Donald Campbell	
29	N.W. ¼ 19	11		John Hirons, William A. Heron	
30	S.W. ¼ 19	11		William Hirons	
31	W. hf. 20	11	George Young		
32	E. hf. 20	10		William Shanacy	
33	20	10		John & P. Quinn	
34	E. hf. 21	10		John W. Quinn	
35	E. hf. 18	9		John Copeland, sr.	
36	W. hf. 19	9	William Howard	James Hewis	F.
37	E. hf. 20	9		Henry Harrison	
38	W. hf. 21	9	Fred Harrison	Richard Harrison	F.
39	W. hf. 20	8	James & E. Greenfield	Peter Curtis	
40	E. hf. 22	8	Thomas Dawson		
41	E. hf. 23	7		William Chappell	
42	E. hf. 22	6	Peter McLaughlin		
43	E. hf. 16	8		Alfred Smallman	
44	E. hf. 17	7	Frederick Sneath		
45	W. hf. 14	6	Robert J. Munro		
46	E. hf. 16	5	P. Dunn	Thomas Dunn	
47	W. hf. 18	4	John Gordon		
48	E. hf. 19	4		John A. Fraser	
49	W. hf. 21	3	Daniel Quinlan	M. Quinlan	
50	W. hf. 5	1	James McBride	Frederick Hood	
51	1 & 2		(W. Nelson Square,	Barrie)	F.
52			(Elizabeth Street,	Barrie)	F.
53			(Allandale Station,	South Barrie)	F.
54	E. hf. 20	5	Robert Brown	Thos. Cundle	

Notes on Village Sites of Vespra.

No. 1. This site is at the junction of Marl Creek and the Nottawasaga River, and the relics were found on a small field of about two acres. It had iron tomahawks, stone axes and chisels, arrowheads, etc. Modern Indians have frequented this place quite often, and it is evidently a comparatively modern site, no pottery fragments or other early relics having been found that would lend any support to an opposite conclusion.

No. 2. Its position is on a knoll, or gently rising piece of ground, in a bay of the extinct inland lake, around whose margin is a raised terrace of that lake. The various occupants of the farm have found stone axes, pipe and pottery fragments, light-colored flint chips, etc. It is on the Minesing "Island," already described in the introduction to the Vespra sites. The evidence afforded is sufficient to place it in the Pre-Huron class.

No. 3. A site of the gouge-using people, who dwelt here probably when the extinct inland lake reached to this place. In this farm the shore of that lake made wave-washed formations of reddish sand, and evidently went no further east up the valley, but made here an ideal place for camps of those early aborigines. In modern times there was a good fishing place at the fork of Matheson's Creek with the Willow Creek, and the modern Indians made use of this place as a camp site as well as the ancient ones.

No. 4. Numerous relics have been found on the low ground here at some distance from the foot of Minesing hill. It seems to have been a site of the gouge-using people, or water-edge site, those Indians living here, as elsewhere, at the sides of the lakes and rivers. In this case, it is assignable to the period of the extinct inland lake.

No. 5. This site is about 100 feet higher than the surrounding land, being on the edge of the top of the Minesing hill, formerly known as Thomlinson's Hill, and commands one of the best views of all the country around. It is on the Minesing "Island," which is surrounded by flat ground, and is immediately opposite the end of a peak of land along which ran a trail, evidently directed toward this place. The site is on both sides of the Minesing Road, which crosses it, there being an acre or more east of the road, on which remains were found. Altogether, it covered about four acres, and was an important village in its day. It appears to have been an early Huron site, and its position on the hill suggests palisading. Large pine trees have grown up since the place was inhabited, and their stumps were to be seen until lately. Among the numerous relics found here, there have been many fragments of pottery with elaborately decorated patterns of Huron type, pipes (some of them of the belt pattern), bone tools (in these was a phalangeal or toe bone of a moose, dug up from the depth of two feet), and other kinds of relics. In the neighborhood of the site, a single iron tomahawk was once found, but otherwise the place has yielded no relics of European make, and even this one may have been lost at a date subsequent to the occupation of the village. The site has a diameter of about 100 paces, or yards, and is irregularly circular or oval. Down the hill, springs issue from the banks and flow to Willow Creek. The soil of the site is gravelly and is dotted with the thick black patches of the separate camps, which have a massed appearance, such as the condition of the village would prescribe, if palisaded.

No. 6. The former occupants of this farm obtained many relics of the usual kinds, at this site, but none of European make. Springs occur along the base of the raised lake shoreline here, furnishing a supply of water for the inhabitants.

No. 7. This site is at the peak referred to under No. 5. It is at the edge of the hill facing the "lake" flat, with a southerly outlook. The present occupant has found various remains of the usual kinds.

No. 8. Situated on the old trail along the peak of land mentioned under Nos. 5 and 7. In modern times, this trail was opened as a public highway, and was known for many years as Lount's Road, but now as the Minesing Road.

No. 9. At the west end of the farm, near the railway, and situated at the top of the hill overlooking the wide "lake" flat. The usual relics have been found. Among them was one iron tomahawk, found near the site, having a mattock poll. Other than this relic the remains were all of aboriginal make.

No. 10. Its position is south of the dwelling, at a moist piece of ground, in which springs occur and furnish a supply of water.

No. 11. Near Matheson's Creek, and several springs issue from the hillside near where the site is placed. It is on a lake terrace at the base of which the springs issue.

No. 12. Near the west end of the farm, on the brow of a hill which has the strong raised shoreline at 790 feet at its base. Lower than this line, there is damp ground furnishing water. On the brow of the hill mentioned, there is a flat patch of land suitable for camps, and from their position of advantage we might infer that there was some kind of palisade, or defence. It is near the line of the trail to the Neutrals.

No. 13. The site is near a spring, which is the source of a stream. It is distinctly Huron of the early period. The relics found included clay pipes, many of them of the belt pattern. An unfinished stone pipe represented a bird. Other pipes had the so-called trumpet-mouth pattern and human faces. A chert spearhead and a phalangeal or toe bone of a small deer were also found, but no European relics.

No. 14. Some years ago, tenants of this farm (which is the Spence homestead) plowed up pottery fragments and other relics. There are also signs of camps on the adjoining lot north (lot No. 31), on the low ground westward.

No. 15. About half way across the farm, (which has a length of a mile and a quarter), the owner has found various relics. There is an area on the higher ground westward, that bears evidence of having been the corn patch of the village.

No. 16. The site had the usual pottery fragments, and other relics, but has been somewhat obliterated by cultivation. Some years ago two Indian skeletons were found near it.

No. 17. This one occupied about 50 square yards, near a spring. It was comparatively small, but was in the neighborhood of a large village. (See No. 19.)

No. 18. This site is among hills, on a flat piece of ground beside springs. Springs are common among these hills, at the surface of the ground, and also at a few inches depth. The site was not large, but yielded various relics, including a stone mortar. No iron relics have been reported.

No. 19. This site, covering about 5 acres, overlooking a ravine, had patches of the usual black soil and ashes of the camp fires, mixed with pottery fragments, pipes, and other relics and fragments. A heap of refuse here had a depth of 4 feet of ashes, etc., and in it were a bear's skull, numerous clam shells, pottery fragments, etc. About 80 rods distant to the northwest from the camps, Alex. Coutts found a bonepit about the year 1865. His father, the late Duncan Coutts, owned the farm at the time of

the discovery, and soon afterward the pit was thoroughly excavated by the neighbors and others, after which the occupants of the farm filled it with logs and refuse. It was about 8 feet deep from the level of the ground to the bottom of the pit, and it had a diameter of 12 feet. A large boulder was found on top of the centre of the pit. The finder, (Alex. Coutts), estimated the number of skeletons deposited there at 250, while Dr. Crookshank of Barrie, who made an examination of it at the time, estimated the number at 300. From the pit the latter secured a skeleton of large proportions. The owner of it, according to the doctor's estimate, attained a height of 6 ft. 6 inches. From the pit were also obtained an iron knife (pointed in shape), wampum beads, and a stone pipe, which Major Rogers presented to a museum in London, England.

No. 20. The owner has found straggling camps on the low ground at places suitable for inhabitation, especially where springs occur at the outlets of the cross ravines. At such places, he has found the usual pottery fragments, and other relics and fragments.

No. 21. Half way between the second and third lines, on this farm, I observed two straggling camps, on a high lake terrace. There was abundance of broken pottery, but the blackness of the soil was not so distinct as in many other cases, perhaps on account of the high position, which has been subjected to much weathering.

No. 22. In former years, the plow turned up numerous remains here, but continued cultivation has somewhat obliterated the site.

No. 23. This site is on the second line, where it reaches the edge of the hill; and being thus situated at the top of the hill or ridge, it overlooks Little Lake, which is about half a mile distant. There is a spring at the foot of the hill, where the inhabitants of the village evidently got their water supply. In the cultivated field on the west side of the second line, I counted some five camp fires, all of which had broken pottery and other fragmentary relics, the pottery having had Huron patterns. On the other side of the road there are also camps which belonged to the same village.

No. 24 There are camps beside a spring, about half way across the farm to the second line, from the first. It faces Little Lake. Relics of the usual kinds have been picked up.

No. 25. This site is on rising ground, with marshy ground in its neighborhood, where a supply of spring water could be obtained. E. H. Williams found some pottery fragments in the usual blackened soil. This, and the preceding seven sites, form a sort of chain of villages, all facing the Willow Creek and Little Lake, and situated on or near the edge of the high ground northeast from the lake and creek. The remainder of the sites in Vespra occupy the large ridge on the opposite side of the Willow Creek.

Village Sites on the Southerly Ridge.

No. 26. Pottery fragments have been observed in considerable quantities in the field of this farm next to the eleventh line. Across the line are the remains of the "Old Fort," marked on modern maps. This was a blockhouse, built in 1814, in connection with the Anglo-American war, and was used as a fortified station until the thirties, or probably as late as 1842. The remains may have belonged to Indians camped near the fort, but they would seem to indicate an older period than the fort itself, as old as the

Hurons. The Nine Mile Portage, from Kempenfeldt Bay at Barrie passed here on its way to the Willow Creek, in the swamp beneath the block-house.

No. 27. A ravine is close to this site where the Indians could obtain a supply of water. The occupants of the farm found relics in moderate numbers. The soil is clay, and in this respect, which is exceptional, it resembles another site in the neighborhood, No. 33.

No. 28. The former owner, Donald Campbell, found relics at a camping ground, which was probably not extensive. There is no water supply on the surface at the present time. The traces of aboriginal occupation have been well nigh obliterated by cultivation.

No. 29. This site is small, covering about quarter of an acre. It is beside a small stream, and had ashes of the campfires, strewn with pottery fragments, etc., but no iron relics were reported by the three observers, whose evidence I have taken in connection with it. It is situated on the ridge with springs at the foot of cliff, facing the west, with the Blue Mountain range, in the distance, across the Nottawasaga valley, on which the Tobacco Nation dwelt. On the adjoining farm, (lot 18) some relics were found. Although situated on a ridge, it is doubtful whether this site was palisaded.

No. 30. A ravine separates this site from the last one. Like site No. 28, it is on the ridge overlooking the westerly valley of the Nottawasaga. The signs of Indian occupation were more distinct many years ago than now, having been made indistinct by cultivation.

No. 31. At the boundary of lots 19 and 20. Blackened patches of soil are still to be seen near where the former house of Wm. Hirons stood, on the first mentioned lot. Its position is also on the ridge, like the two previous sites. Here was once found a stone combination tool, axe at one end and gouge at the other.

No. 32. It occupies about an acre, south of the farm orchard, and is near a supply of water. Cultivation of the ground has well nigh obliterated the signs of aboriginal occupation.

No. 33. This site is on high ground, and is exceptional in being at some distance from spring water. The soil is clay, and in this respect is also exceptional, but resembles site No. 27, in the same neighborhood. Some five camp fires, the remains of that number of single lodges, were to be seen, compactly arranged. The population could not have exceeded fifty, and from the compact arrangement and the absence of water supply, I should judge it was a winter village encampment. The usual fragments were found strewn throughout the blackened soil, but cultivation has largely obliterated the traces of Indian occupation. Augustine Quinn, son of the former occupant of this farm until 1889, was a close observer of the remains found here.

No. 34. The noteworthy feature here was a burial ground of single, or isolated graves, on the south face of a steep hill. The positions of the graves were indicated by slight depressions in the sandy soil, and from the statements of those who made some examination of a few of them, I conclude that the corpses were placed in a sitting posture. This burial ground resembles those of Algonquin origin in other parts of Simcoe County. It is said that the bodies were disposed about due north and south. On account of the great age of the burial ground, or the porous condition of the soil, the bones were very much decayed, and had become like slaked lime.

No. 35. A few stone axes, two or three clay pipes, and some other relics were found some years ago by the late Mr. Copeland, on a patch near the old farm house. A water supply was near when the forest was in existence, but has become dry since that time, and the present well is 190 feet deep. A ravine running westward goes through the high ground near this place.

No. 36. Two patches of camp fires, about 10 rods apart, and each covering from 30 to 40 square yards, once were to be seen near the barn, but have become somewhat obscured by cultivation in recent years. At these camps, pottery fragments, pipes, (including face pipes and animal pipes), and other aboriginal relics were found, also two iron or steel knives having a pointed shape, and a medal or bangle of silver or other white metal with two holes for suspension. It is said there was an artificial earthwork at the creek on the same farm.

No. 37. This site is half way across the farm mentioned, on a flat patch of ground partly surrounded by ravines, and may have had some attempt at fortification. It is near the trail, which became the present Sunnidale Road. In company with Peter Curtis, I made some examination of an ashbed here in 1898, to determine the characters of the site, if possible. We found various bone fragments and utensils. The pottery, or some of it, had the basket made form or pattern, *i.e.*, had probably been moulded inside a woven basket, the marks of the individual withes being visible on the surfaces of the fragments. One of the pipes (clay) had the belt pattern in a modified form.

No. 38. The camps straggled along a shelf of ground, without attempt at fortification. Some springs and pondholes are near the place. As its position is in the farm orchard, and near the buildings, the evidences of aboriginal occupation have been obliterated. The village may have had some connection with the burial ground on the other side of the concession line. A single iron article is reported to have been found at this site.

No. 39. This site covers about an acre in the orchard. It was a straggling village, unfortified, and there is now no water supply on the surface of the ground, although the case might have been different when the forest covered the land here.

No. 40. On a high lake terrace here, there is a site covering about two acres. The ashbeds (about 15 campfires) were arranged in an oval form, of which I made a diagram in 1898, observing then the oval form. Subsequently, on reading a passage (p. 27), in Wm. E. Connelley's "Wyandot Folklore." (Topeka, 1899) in which he records the tradition of how the Wyandots, in ancient times, built their villages in an oval order surrounding the shell of the Big Turtle, I was able to attach a meaning to the oval arrangement at this site. The ashbeds are single, not the Huron form of long-house. The clay pipes yielded by this site have not the belt pattern of early Huron sites, unless we call it a modified form of the belt pattern. There was some basket-made pottery on the site. A little farther westward on the same farm, there is a spring creek, on which are some remains of old beaver dams (six or more of which may be counted). There were remains of other camps on the low ground near this creek, probably of different date from the higher village; so that, there probably were two sites here instead of one.

No. 41. This site is beside a trespass road, where a stream emerges from what is known locally as the "Big Hollow," near the seventh line. Altogether, on more than an acre relics were found. On both sides of the road mentioned, there were parts of the site, and in the road itself, pottery

fragments were turned up in the course of doing the roadwork. The pottery was mostly, if not altogether, plain, without figures or decoration of any kind.

No. 42. There is an acre or more of ground, on which there are blackened patches, and ashbeds with the usual fragmentary relics. It is situated at the boundary of lot 23, at the head of a ravine. The pottery had coarse-grained quartz (crushed stone) for its central layer, and was rudely decorated. One of the camps was an arrowmaker's workshop, at which were strewn many flint chips and broken flints (light colored). Two gouges were found, but no iron relics have been reported.

This, and the preceding ten, or more, sites, present some differences, when compared with other sites known to have belonged to the Hurons of the early period. Beside these differences, there is the fact that they occupy the same geographical area; and it is evident that they belonged to a tribe of a different period, or race, from the early Hurons. The remainder of the sites in this township, yet to be described, are mostly those of early Hurons, and will be found to present some contrasts to those just described.

No. 43. This site, with succeeding ones, bears evidence of belonging to early Hurons. There were signs of from 15 to 20 lodges, upon which were found the usual relics, but no iron ones. Some artificial holes were observed upon the surface of the ground. Springs of fresh water issue near the place.

No. 44. A few camps, at which the usual pottery fragments, and others relics were found, but no European ones. Cultivation has been effectual in destroying the signs of the aborigines, in a degree.

No. 45. The position of this village was selected for defence, being surrounded by lower ground and a creek, partly. It was on a flat patch of ground, or plain of gravelly soil, covering perhaps 3 or 4 acres, on the north side of the stream, known as Munro's Creek. About the year 1898, while the statute labor on the 7th line was in progress, three Indian skulls were exhumed where the road crosses the site.

No. 46. The westerly part of this site is surrounded by a ravine and lower ground, thus leaving it on a peak, as if for protection against surprise. As for the rest of the site, it consists of a long and narrow chain of camps, about 60 rods long, placed upon a terrace which forms the brow of a cliff of sloping ground, with springs at the foot of the slope. It covers five acres, or perhaps more. On this area, I counted about 25 camps in straggling, and mainly unfortified, positions. The pipe fragments were mostly plain, devoid of ornamentation or artistic effort. Among other relics, there was a fragment of a corn mortar. On the adjoining farm south, M. Robertson found some aboriginal remains on the hilltop above the main site, at the place where the scaffold cemetery was probably located by the early Huron inhabitants.

No. 47. Its position was favorable for defence, being partly surrounded by ravines. There was a supply of spring water near it. An Indian skeleton was discovered in 1900. The indications point it out as belonging to the early Huron class. Pipebowls, plain.

No. 48. The position of this site was on a knoll near the farm-house. It consisted of a few camps.

No. 49. This site has a position on a peak of land, as if for defence. Two acres, or more, are occupied by the site, which had about 20 lodges, averaging about 3 fires apiece (Huron form of lodge). The camps extend for 150 yards or more along the high strip of land. The Little Lake is about a mile distant, from this site, which is on the Main trail to the

Neutrals, passing the lake. A clay pipe with human face was reported, but nearly all the pipes from this site have the belt pattern. Stone axes are comparatively few. Snail shells (emptied for food), clam shells, small animal bones, were abundant in the ashbeds. Once a skeleton was exhumed at the place, but the scaffold cemetery, (and as it was an early Huron site, there was doubtless one) was probably east of the site a short distance. About midway in the lot, *i.e.*, at the boundary between the west and east halves of it, on a little higher ground, there were some evidences of what might have been the scaffold ground.

No. 50 This was a short way from Little Lake, which was a rendezvous for Indians in all periods. It was on ground raised above the level of the lake, with springs immediately below.

No. 51. This was the place, at the shore of Kempenfeldt Bay, known as the "Indian Landing" when the settlers first came to this locality. In the shore here there is a pleasant cove, which affords a suitable landing place in the leeward of some high ground inland. It is probable that this was the end of the portage overland to the Little Lake, the other terminus being the last mentioned site (No. 50.) Numerous relics have been found in the vicinity of this Indian landing. Some years ago, the late James M. Hunter found a few in their garden, at the lots mentioned (Nos. 1 and 2, W. Nelson Square). Subsequently, W. H. Buttery, who lives on the hill above this place, also found a few. While at other places near the shore, and in this locality, other finds have been reported.

No. 52. This site is noteworthy on account of a bonepit, which the first settlers found here about the year 1840, and which became known as the "Tim Haggart pit". Its position was close to the southwest corner of Toronto and Elizabeth streets, Barrie, and it was one of the first burial pits discovered in this pit-yielding district. Dr. Pass (the first resident doctor), John McWatt, Richard Carney, and other early residents of the town, (or village, then), examined the pit, and Dr. Pass preserved two or three of the crania for some years in his surgery. According to the late J. McWatt, the pit had a diameter of 20 feet, (this perhaps included the slope due to sinkage) and it contained from 200 to 300 crania. A number of the skulls had round holes in the forehead, and other marks were upon them, these being likely due to the mortuary practice of boring holes in the skulls, as we have found in other places. They were placed in the pit face downward. Some of the femurs (thigh bones) were large. The late Mrs. Haggart informed me that the pit had some brass kettles, and other articles, some of which were perhaps found in the neighborhood of it. Other Indian skeletons were found at other times in single graves and in at least two similar pits around about the larger pit. It is not easy, at this length of time, to obtain accurate information as to the number of these smaller pits, but I have details of at least two such pits, and have placed this number in the enumeration of pits for the whole township. One came to light when workmen were digging the cellar for the large dwelling on lot 32, E. Toronto street, many years ago. Another was found on the next lot south, May 30, 1905, while workmen were engaged in a similar task. In the last mentioned case, about a dozen skeletons, or parts thereof, were found. It is said that several years ago, modern Indians camped near this place, and it would afford a good camping ground, as it is on a sandy patch of rising ground, a short way from the shore of Kempenfeldt Bay.

No. 53. The village site here was on the north side of the Vespra-Innisfil town line, near the house of the late A. Miscampbell, which faced the bay shore. So far as I have been able to ascertain, it was confined to

about quarter of an acre on the northerly or Vespra side of the town line. At this site, the late John Boon of Allandale found many pottery fragments, clay pipes, stone axes and chisels in considerable numbers. There were no iron relics observed on the site itself, although he once found an iron tomahawk some 450 yards to the west of the site, near the former Episcopal church on the town line. The trail to the Neutrals from this Huron country had to pass this way, on account of the swampy ground which occupied most of the flat all the way from here to the Nottawasaga River. The trail would naturally pass along the sand beach at the head of the bay, as the first settlers did for many years after their arrival. While there was an important site at the northwest corner of the bay, with a well-filled graveyard beside it, (No. 52), this site at the southwest corner of the bay was also an important one, at a distance of scarcely a mile from the last one, and having an equally well-filled burial ground. On the Innisfil side of the town line, near the shore of Kempenfeldt Bay, and also near the camps described by Mr. Boon, there was discovered a large ossuary in the year 1846. Mr. Boon owned the land on which it was situated, at the time of this discovery. The diameter of the pit was 20 feet, according to Mr. Boon, or it had a total sinkage of that amount, and it contained many skeletons. In the case of this bonepit, as in nearly all others, there has been the usual variety of estimates of the numerical strength of its harmless skull-battalion, the guesses ranging from 100 to 1,000.* Many of the skulls had the round, symmetrical form so common to the Huron tribes. Some of the thigh bones were massive. No relics, except bones, were in the pit. Round about, crowded into holes, were some single skeletons; and there were also a few ossuaries of the smaller kind, at least two being verified by the evidence I have been able to gather. The rediscovery of human bones in 1884, and again in 1889, probably belonged to the deposits in the smaller ossuaries. This southwest corner of the bay was a point of departure in the important Indian treaty of 1818, and as such it became a landmark of more than usual importance in modern times, as well as in the times of the Huron braves. The line surveyed from this point divides a series of townships all the way to Lake Huron, or within a few miles of it, there being no less than nine townships located on each side of the line.

No. 54. In the southwest corner of the farm, between two branch ravines which make a naturally fortified position. It is eligibly situated at the head of a stream which passes through Barrie, and locally known as Kidd's Creek. The pottery fragments are figured, yet the site is not upon one of the Huron trails.

Barrie, Ont., May, 1906.

* From 200 to 300 would doubtless be near the truth.

LAKE HURON
GEORGIAN BAY
LAKE SIMCOE
LAKE ONTARIO
TORONTO
HAMILTON
HALDIMAND
WELLAND
LAKE ERIE
KEY
Archæological Map
of
Ontario

LAKE HURON
GEORGIAN BAY
KEY
TRAIL AND PORTAGE
VILLAGE SITE OR CAMPING GROUND
EARTHWORK
KITCHENMIDDEN
ASHBED
MOUND
SINGLE BURIAL
OSSUARY OR COMMUNAL
QUARRY OR CLAY BED
FLINT WORK PLACE
PAINTED ROCKS-PICTOGRAPHS
POTTERY
POTTERY
STONE PIPE
SURFACE FINDS
IRON TOMAHAWK
MANY OF ANYTHING
PLACES EXAMINED
LAKE ST CLAIR
LAKE ER

ANNUAL

Archæological Report

1906

BEING PART OF

Appendix to the Report of the Minister of Education Ontario

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PRESENTATION.

HON. R. A. PYNE, M.D., M.P.P.
Minister of Education for Ontario.

SIR,—Herewith I have the honor to present to you the Archæological Report for 1906.

The accessions to the museum during the year include two exchanges —one from the Imperial Museum, Tokio, Japan; and one from the Australian Museum, Sydney, N.S.W.

By purchase, we secured a fine collection from the Rev. R. W. Large, M.D., of Bella Bella, British Columbia.

To the Rev. C. E. Whittaker, of Mackenzie District, we owe many thanks for his gift of ethnological material illustrative of native life among the Loucheux and the Eskimo of Yukon territory.

A miscellaneous collection was purchased from Mr. H. A. Van Winckel of Kingston, Ont.

From our friend, Mr. Clarence B. Moore, we have received numerous excellent specimens in shell and stone, found in the mounds of Florida.

The names of others will be found in the list of "Additions to the Museum" following.

I have the honor to be,

Yours very respectfully,

DAVID BOYLE.

ADDITIONS TO THE MUSEUM.

27,239 Headless bird pipe, found 1903, on J. J. Finney's farm, by his son, Burnt River P.O. The farm is four miles south of Rettie's station, Midland Ry., Somerville tp., Victoria co., Ont. Said to have been found in a grave containing three skeletons, near a village site. Per G. E. Laidlaw.

27,240 Animal head from pipe, Brown's site, Fenelon tp., per Dr. Jas. Grant, Victoria Rd. P.O.

27,241 Basuto pipe, South Africa; said to be native make, but looks like a trader's pipe, per G. E. Laidlaw.

27,242 Gouge and axe, Bob's lake, Bedford tp., John Bay, Cloyne.

27,243 Axe, Bob's lake, Bedford tp., John Bay, Cloyne.

27,244 Flint, Bob's lake, Bedford tp., John Bay, Cloyne.

27,245-6 Arrow-heads, Bob's lake, Bedford tp., John Bay, Cloyne.

27,247-8 Arrow-heads, lake Massanog, Barrie tp., John Bay, Cloyne.

27,249 Flint, lake Massanog, Barrie tp., John Bay, Cloyne.

27,250 Button or bead, Gull lake, Barrie tp., John Bay, Cloyne.

27,251 Chisel or axe, Gull lake, Barrie tp., John Bay, Cloyne.

27,252 Axe, Gull lake, Barrie tp., John Bay, Cloyne.

27,253 Gouge, Gull lake, Barrie tp., John Bay, Cloyne.

27,254 Broken axe, lake Massanog, Barrie tp., John Bay, Cloyne.

27,255 Axe or wedge, Loon lake, Anglesea tp., John Bay, Cloyne.

27,256 Axe, Loon lake, Anglesea tp., John Bay, Cloyne.

27,257 Small chisel, Loon lake, Anglesea tp., John Bay, Cloyne.

27,258 Gouge, Rideau canal, near Westport, John Bay, Cloyne.

27,259 Gouge, Rideau canal, near Westport, John Bay, Cloyne

27,260 Rubbing stone, Rideau canal, near Westport, John Bay, Cloyne.

27,261 Piece of argillite, Barrie tp., John Bay, Cloyne.

27,262 Pipe, lake Massanog, Barrie tp., John Bay, Cloyne.

27,263 Pipe, Anglesea tp., John Bay, Cloyne.

27,264 Broken axe, Bob's lake, Bedford tp., John Bay, Cloyne.

27,265-8 Flints, Rideau valley, Lanark co., Dr. T. A. Beeman, Perth.

27,269-70 Arrow-heads, Bobs Lake, Lanark co., Dr. T. W. Beeman, Perth.

27,271-2 Pieces of soapstone pipes, Lanark co., Dr. T. W. Beeman, Perth.

27,273 Pipe, Six Nations, Brantford, Chief Hill.

27,274 Flint scraper (degraded,) Pilkington tp, Wellington co., D. Boyle.

27,275 Large carved war club, Santo Island, New Hebrides.
Van Winckel Collection.

27,276-98 Arrowheads, and flints, some fine specimens, from Wolfe Island, Ont.

27,298-327 Arrowheads and flints, from Richland, Mo.

27,328-33 Arrowheads and flints, from Pittsburg tp., Ont.

27,334-37 Arrowheads and flints, from Millhaven, Ont.

27,338 Arrowhead, from Orillia, Ont.

27,339 Arrowhead, from Simcoe Island, Ont.

27,340 Copper arrowhead, found at Cape Vincent, N.Y.
27,341-55 Beads made from crinoid sections, Woodstock, Ont.
27,356 Slingstone, Mt. Morris, N.Y.
27,357 Stone bead or spindle-whorl, W. Va.
27,358-9 Brass bracelets, found with skeleton, at Lethbridge, Alta.
27,360 Shell bead, Orillia, Ont.
27,361 Shell bead, Trenton, Ont.
27,362-4 Women's slate knives, Wolfe Island, Ont.
27,365-7 Women's slate knives, Simcoe Island, Ont.
27,368 Clay pipe, Wolfe Island, Ont.
27,369 Soapstone pipe, highly polished, Pittsburg tp. Frontenac co., Ont.
27,370 Soapstone pipe, unfinished. Pittsburg tp., Frontenac co., Ont.
27,371 Soapstone pipe, very good, Richland, Mo., U.S.A.
27,372-5 Fragments of pipes, Trenton, Ont.
27,376-7 Pottery markers. Wolfe Island, Ont.
27,378-9 Bone awls, Trenton, Ont.
27,380-1 Celts or axes, Parham, Frontenac co., Ont.
27,382 Gouge, Parham, Frontenac co., Ont.
27,283-6 Celts or axes, Middlesex co., Ont.
27,387-90 Celts or axes, Wolfe Island, Ont.
27,391-2 Broken gouges, Wolfe Island, Ont.
27,393-5 Celts or axes, near Kingston, Ont.
27,396-7 Celts or axes, Pittsburg tp. Frontenac co., Ont.
27,398 Gouge, Battersea, Frontenac co., Ont.
27,399 Celt or axe, Battersea, Frontenac co., Ont.
27,400 Gouge, very fine, Amherst Island, Ont.
27,401 Gouge, Ernestown sta., Lennox co., Ont.
27,402 Celt or axe, Trenton, Ont.
27,403-4 Stone pestles, W. Va
27,405 Gorget, one hole, Wolfe Island, Ont.
27,406 Gorget, one hole, Simcoe Island, Ont.
27,407-8 Banner stone, very fine, Richland, Mo.
27,409 Banner stone, not bored, Simcoe Island, Ont.
27,410 Banner stone, not bored, London, Ont.
27,411 Monitor stone pipe, unfinished, Wolfe Island, Ont.
27,412 Grooved axe, Richland, Mo
27,413 Piece of worked stone, used for polishing, Wolfe Island, Ont.
27,414 Soapstone bead or small banner-stone, Wolfe Island, Ont.
27,415 Small celt, Amherst Island, Ont.
27,416 Piece of serpentine, round and pointed, Wolfe Island, Ont.
27,417-22 Fragments of pottery, from different parts of Ontario.
27,423 Small hematite celt, W. Va.
27,424 Piece of galena.

27,425 Buckskin Jacket, Tuscarora Reserve, Captain Bill.
27,426 Totem pole of black slate, British Columbia.
27,427-9 Three poisoned arrows, barbed, South Sea Islands.
Exchange from The Australian Museum, Sydney, N.S.W.
27,430 Boomerang, (Kiley) Victoria Plains, East, Western Australia.
27,431 Boomerang, (old type) Macquarie R., N.S.W.

27,432 Boomerang, (Kiley) Menzies District, Western Australia.
27,433 Boomerang, (Kiley) Menzies District, Western Australia.
27,434 Boomerang, (leaf type) Bourke, Western N.S.W.
The foregoing are all return boomerangs.
27,445 Boomerang, (non-return) Carandatta, Georgina R., W. Queensland, Australia.
27,436 Boomerang, (hook), Central Australia. When well thrown the hook will swing on adversary's weapon, striking him.
27,437 Shield (mulga type) Dubbo, N.S.W. Used to ward off Mulla or Waddy blows.
27,438 Shield, (Goolmarry type) Queensland, Australia.
27,439 Womera, (Mendi) Mapoon, Batavia R., North Western Queensland.
27,440 Womera, (thick type) Booraloola, McArthur R., Gulf of Carpentaria.
27,441 Womera, (Chinainggoo) South Alligator River, Northern Territory, Australia.
27,442 Nulla Nulla, waddy or club, (phallic headed) New England, N.S.W.
27,443 Nulla Nulla, (pronged) Broad Sound, East Central Queensland.
27,444 Nulla Nulla, (ordinary type) Broad Sound, East Central Queensland.
27,445 Nulla Nulla, (ordinary type) South Australia.
27,446 Nulla Nulla, (shewing flutings) Menzies District, W. Australia.
27,447 Stone axe or Tomahawk, (Kidjoo) mounted in handle Central North West Kimberley, W. Australia.
27,448 Stone axe (unmounted) West N.S. Wales.
27,449 Stone axe (unmounted) Guntawang, N.S.W.
27,450 Stone axe (unmounted) Lachlan R., N.S.W.
27,451 Top stone or muller, cobar, N.S.W. Used in conjunction with a larger lower stone for grinding seed.
27,452 Glass spear head, Kimberley, W. Aust.
27,453 Glass spear head, Kimberley, W. Aust.
27,454-5 Firesticks, the working ends in protective sheath. To produce fire the upright stick or drill is twirled by the hands in the other stick with the cup-like hole, the latter being held in position by the feet of the operator. Annan River, Queensland, Aust.
27,456 Firesticks (Ingurarthoo), same method as above, South Alligator River, Northern Territory, Aust.
27,457 Native bark cloth, used as a mat to lie on, Cairns, East Central Queensland.
27,458 Reed "dilly basket" (Mboga), Mapoon, Batavia River, W. Queensland.
27,459 Red pigment (Wilgee) for painting weapons and for personal decoration, Kimberley, W. Aust.
27,560 Vegetable gum (prepared) used as a cement, Kimberley, W. Aust.
27,561 Human hair belt (male), "Binbinga" tribe, Gulf of Carpentaria.
27,562 Cord belt, worn by males, sometimes around the neck, Anula tribe, Gulf of Carpentaria.

27,563 Belt (Tchili) ornamented with strips of rock lily work (Dendrobium sp.) Mapoon, Batavia River, Aust.
27,564 Woman's head band, "Kaitish Tribe," Central Aust.
27,565 Woman's head band, "Kaitish Tribe," Central Aust.
27,565a Necklet, Alligator River, Northern Territory of South Aust.
27,566 Necklet (Murrandin), Central Alligator River, Northern Territory of South Australia. Grass section on bugles.
27,567 Nose style, a bird wing bone worn through nasal septum, "Binbinga Tribe," McArthur River, Northern Territory of South Aust.
27,568 Armlet, (Merrerun) South Alligator, Northern Territory of South Aust.
27,569 Armlet, split cane, "Mara Tribe," McArthur River, Northern Territory of South Aust.
27,570 Armlet, wood bound with string, McArthur River, Northern Territory of South Aust.
27,571 Spear (Wooka), heavy, flat-pointed, Georgian River, West Queensland, Aust.
27,572 Spear (Cadjee) barbed, E. Murchison, West Aust.
27,573 Spear (Quartzite headed), Alligator River, N. Territory of South Aust.
27,574 Spear (plain wood), West Aust.
27,575 Spear (for fish), Townsville, Queensland, Aust.
27,576 Spear (for fish), Gilbert River, Queensland, Aust.
27,577 Spear (Goss pointed), Oscar Ranges, West Aust.
27,578 Spear (Funny) *native name*, Mapoon, Batavia River, Queensland, Aust.
27,579 Spear (double ended), North Queensland, Aust.
27,580 Spear (Multibarbed), Port Essington, Northern Territory, Aust.
27,581 Spear (Multibarbed), Port Essington, Northern Territory, Aust.
27,582 Shell adze, Mortlock Island, Caroline Group.
27,583 Adze (Volcanic tuff), British New Guinea.
27,584 Axe, British New Guinea.
27,585 Stone adze or axe, Uji, Solomon Islands, S. Pacific.
27,586 Stone adze or axe, Uji, Solomon Islands, S. Pacific.
27,587 Jade adze or axe, Collingwood Bay, British New Guinea.
27,588 Adze (Volcanic tuff), British New Guinea.
27,589 Adze, Samoa, Navigator Islands, S. Pacific.
27,590 Axe (Jade) New Caledonia, S. Pacific.
27,591 Adze, Samoa, Navigator Islands, S. Pacific.
27,592 Nobbed club, Fiji Islands, S. Pacific.
27,593 Discoid stone headed club, Rigo District, British New Guinea.
27,594 Nobbed stone headed club, Mambare River, British New Guinea.
27,595 Club, New Ireland, S. Pacific
27,596 Club (spatulate), New Ireland, S. Pacific.
27,597 Club, New Britain, S. Pacific.
27,598 Club (bent), Reiva, Viti, Levu, Fiji Group.
27,599 Dancing club, New Ireland, S. Pacific.
27,600 Sword club (plaited), Solomon Group, S. Pacific.
27,601 Bow, New Hebrides, S. Pacific
27,602 Bow, Erromanga, New Hebrides.
27,603 Arrow, New Hebrides, S. Pacific.

27,604 Arrow, New Hebrides, S. Pacific.
27,605 Arrow, New Hebrides, S. Pacific.
27,606 Arrow, New Hebrides, S. Pacific.
27,607 Arrow, New Hebrides, S. Pacific.
27,608 Arrow, New Hebrides, S. Pacific.
27,609 Arrow, New Hebrides, S. Pacific.
27,610 Arrow, Erromanga, New Hebrides, S. Pacific.
27,611 Arrow, Erromanga, New Hebrides, S. Pacific.
27,612 Arrow, Erromanga, New Hebrides, S. Pacific.
27,613 Arrow, (point human bone), Erromanga, New Hebrides.
27,614 Arrow, (point human bone), Erromanga, New Hebrides.
27,615 Arrow, (point human bone), Erromanga, New Hebrides.
27,616 Arrow, (point human bone), Erromanga, New Hebrides.
27,617 Arrow, (point human bone), Erromanga, New Hebrides.
27,618 Arrow, (point human bone), Erromanga, New Hebrides.
27,619 Arrow, (point human bone), Erromanga, New Hebrides.
27,620 Arrow, (point human bone), Erromanga, New Hebrides.
27,621 Arrow, (point human bone), Erromanga, New Hebrides.
27,622 Arrow, (point human bone), Erromanga, New Hebrides.
27,623 Bow, British New Guinea.
27,624 Arrow, British New Guinea.
27,625 Arrow, Vanu River, British New Guinea.
27,626 Arrow, British New Guinea.
27,627 Arrow, British New Guinea.
27,628 Arrow, British New Guinea.
27,629 Arrow, British New Guinea.
27,630 Arrow, British New Guinea.
27,631 Arrow, British New Guinea.
27,632 Arrow, British New Guinea.
27,633 Arrow, British New Guinea
27,634 Arrow, British New Guinea.
27,635 Arrow, British New Guinea.
27,636 Arrow, British New Guinea.
27,637 Arrow, British New Guinea.
27,638 Bow, Solomon Group.
27,639 Arrow, Solomon Group.
27,640 Arrow, Bonka, Solomon Group.
27,641 Arrow, Admiralty Island.
27,642 Arrow, Solomon Group.
27,643 Arrow, Solomon Group.
27,644 Arrow, Admiralty Island.
27,645 Arrow, Solomon Group.
27,646 Arrow, Solomon Group.
27,647 Arrow, Solomon Group.
27,648 Arrow, Solomon Group
27,649 Arrow, Bonka, Solomon Group.
37,650 Arrow, Bonka, Solomon Group.
27,651 Arrow, British New Guinea.
27,652 Arrow, Solomon Group.
27,653 Arrow, Bonka, Solomon Group.
27,654 Arrow, Solomon Group.
27,655 Arrow, Solomon Group.

27,656 Arrow, British New Guinea.
27,657 Arrow, Solomon Group
27,658 Arrow, Bonka, Solomon Group.
27,659 Arrow, Solomon Group.
27,660 Arrow, Solomon group.
27,661 Arrow, Solomon group.
27,662 Arrow, Bonka, Solomon group.
27,663 Arrow, Solomon group.
27,664 Arrow, Solomon group.
27,665 Arrow, British New Guinea.
27,666 Arrow, Bonka, Solomon group.
27,667 Paddle, Matty Is., South Pacific.
27,668 Drum or "tom tom," British New Guinea.
27,669 Lime gourd, British New Guinea.
27,670 Cocoanut ladle, Admiralty Is.
27,671 Netting needle, Collingwood Bay, Brit. New Guinea.
27,672 Needle, Greenwich Is., South Pacific.
27,673 Rope-making implements, British New Guinea.
27,674 Cocoanut spoon, British New Guinea.
27,675 Cocoanut cup, British New Guinea.
27,676 Cocoanut cup, British New Guinea.
27,677 Obsidian headed spear, Admiralty Is.
27,678 Obsidian headed spear, Admiralty Is.
27,679 Obsidian headed spear, Admiralty Is.
27,680 Obsidian headed spear, Admiralty Is.
27,681 Obsidian headed spear, Admiralty Is., ornamented with Job's tear seeds, coix lachryma Linn.
27,682 Obsidian headed spear, ornamented with Job's tear seeds (coix lachryma Linn), Solomon Islands, South Pacific.
27,683 Barbed spear, Solomon Islands, South Pacific.
27,684 Barbed spear, Solomon Islands, South Pacific.
27,685 Spear, burnt-in ornament on shaft, Admiralty Is., South Pacific.
27,686 Spear, burnt-in ornament on shaft, Admiralty Is., South Pacific.
27,687 Palmwood spear, British New Guinea.
27,688 Palmwood spear, British New Guinea.
27,689 Spear (bamboo point) for pigs, Brit. New Guinea.
27,690 Spear, New Ireland South Pacific.
27,691 Spear, New Ireland, South Pacific.
27,692 Spear (barbed), Matty Is., South Pacific.
27,693 Spear (barbed), Matty Is., South Pacific.
27,694 Spear (four pronged), Matty Is., South Pacific.
27,695 Fish-hook and line, Mortlock Is., Caroline group.
27,696 Fish-hook and line (Bawonga), Funafuti, Ellice group.
27,697 Fish-hook and line, Funafuti, Ellice group.
27, 98 Shark-hook, Admiralty Is., South Pacific.
27,699 Fish-hook, line and float, Brit. New Guinea.
27,700 Massi or Tappa cloth, Fiji Is., South Pacific.
27,701 Tappa dress, Tonga, Friendly Is, South Pacific.
27,702 Matting belt, New Hebrides, South Pacific.
27,703 Tappa cloth, Stewart Is., South Pacific
27,704 Fan, Raratonga, Harvey or Cook Is.
27,705 Bone dagger (Cassowary tibia), Brit. New Guinea.

27,706 Turtle bone knife, (sesefonu), used for extracting cocoanut, Funafuti, Ellice group.
27,707 Turtle shell knife, British New Guinea.
27,708 Sling, British New Guinea.
27,709 Sling, Cape Lambert, New Britain.
27,710 Comb (head ornament), Admiralty Is.
27,711 Pearl shell knife (Di-a), Funafuti, Ellice group.
27,712 Jew's harp (musical inst.), Brit. New Guinea.
27,713 Pandean pipes Brit. New Guinea.
27,714 Armlet (trochus niloticus), Brit. New Guinea.
27,715 Armlet (trochus niloticus), Brit. New Guinea.
27,716 Armlet (trochus niloticus), Brit New Guinea.
27,717 Armlet (cocoanut shell), Wanigela, Brit. New Guinea.
27,718 Armlet (siti or sifu), Collingwood Bay, Brit. New Guinea.
27,719 Armlet (conus millepunctatus), Brit. New Guinea.
27,720 Armlet (conus millepunctatus), Brit New Guinea.
27,721 Armlet, Job's tear seeds worn in mourning, Wanigela, Collingwood Bay, Brit. New Guinea.
27,722 Shell breast-ornament (orulum ovum), Brit. New Guinea.
27,723 Nose ornament (worn in septum), Brit. New Guinea
27,724 Ear ornament (mourning), Wanigela, Brit. New Guinea.
27,725 Ear ornament (kakura or kaibera), Job's tear seeds (coix lachryma L'nn), Wanigela, Collingwood Bay, Brit. New Guinea.
27,726 Belt (ornamented with shells), Brit. New Guinea.
27,727 Head ornament, worn upright over ears, shells to front, Brit. New Guinea.
27,728 Shell girdle (nassa grandifera), Mortlock Is., Caroline group, South Pacific.
27,729 Wrist ornament, worn only by chiefs (ovula verrucosa), Brit. New Guinea.
27,730 Rattle-seed necklet, Espiritu Santo, North New Hebrides.
27,731 Necklet (banana seeds), Mambare River, Brit. New Guinea.
27,732 Necklet (oliva carneola), Brit. New Guinea.
27,733 Necklet (shell section and seeds), Erromanga, New Hebrides.
27,734 Necklet (shells, melampus luteus), Gilbert Group, South Pacific.

Numbers 27,735-27,750 presented by Rev. C. E. Whittaker, Herschel Island, Yukon.

27,735 Woman's knife (slate).
27,736-7 Net making tools.
27,738 Horn knife.
27,739 Ice chisel.
27,740 Eskimo scraper.
27,741 Eskimo sinker
27,742-44 Spears (slate) Eskimo.
27,745-48 Women's knives "imperfect."
27,749 Comb.
27,750 Comb.

Numbers 27,751-27,809 presented by Clarence B. Moore, Philadelphia, from Florida.

7,751-2 Shell implement or tool, Crystal, R., Citrus Co.

27,753 Shell implement or tool, Goodland Pt., Lee Co.
27,754 Shell implement or tool, Gilberts, Lee Co.
27,755 Shell implement or tool, Marco, Key Mares, Lee Co.
27,756 Shell implement or tool, Goodland Pt., Lee Co.
27,757 Shell implement or tool, Marco, Lee Co.
27,758-60 Shell implement or tool, Chokoloskee, Lee Co.
27,761-2 Shell implement or tool, Marco, Lee Co.
27,763-9 Shell implement or tool, Marco, Lee Co.
27,770 Shell and implement, Goodland Pt., Lee Co.
27,771 Shell implement or tool, Chokoloskee, Lee Co.
27,772 Shell implement or tool, Goodland Pt., Lee Co.
27,773-4 Shell implement or tool, Marco, Lee Co.
27,775 Shell implement or tool, Chokoloskee, Lee Co.
27,776-86 Shell sinkers, Marco, Lee Co
27,787-8 Small shells. Marco, Lee Co.
37,789-809 Stone sinkers, Marco, Lee Co.
27,810 Mealing stone, Auburn, N.Y., E. C. Waters.

Numbers 27,811-27,833 taken from Mound at Port Colborne

27,811 Fine clay pot.
27,812-3 Fine clay pipes.
27,814-5 Fragments of clay pot.
27,816 Large shell breast ornament.
27,817 Record bone.
27,818 Brass kettle.
27,819 Bone comb.
27,820 Shell rattle
27,821-2 Shell beads.
27,823 Shell bead or ornament.
27,824 Shell bead or ornament.
27,825-6 Arrow-heads.
27,827 Shell bead ornament.
27,828 Iron knife.
27,829 Glass bead.
27,830 String small brass beads.
27,831 Box of glass and shell beads.
27,832 Brass pendant.
27,833 Brass and iron bracelet.

Numbers 27,834-27,841 presented by Miss Alexander, Hong Kong, China.

27,834 Chinese calculating device. (*abacus*).
27,835 Chinese palm leaf hat
27,836 Chinese model or device, the original of which is fastened to the necks of children who live in river boathouses, to protect them from drowning by an accidental fall into the river.
27,837 Chinese axe.
27,838 Chinese straw sandals, probably for indoor use.
27,839 Chinese device for collecting the evil spirits from the body of an infant after death. It is then folded and burned.
27,840 Chinese little black devil.
27,841 Chinese palm-leaf rain coat.

27,842 Anklets, South Africa, Dr. Beeman.
27,843 Confederate five dollar bill. Got from Confederate officer at Niagara-on-the-Lake, 1869. C. W. Nash.
27,844 Stone pipe, representing some bird. Mrs. James, Port Perry.
27,845 Samples of Manganese of Iron, Quebec. Mr. Morrison.
27,846 Pemmican bag. H. A. Van Winckel, Kingston.

Numbers 27,847 to 27,977 from R. W. Large, Bella Bella, British Columbia.

27,847 Indian carved box for dance masks.
27,848 Cedar cooking box.
27,849 Tongs for hot stones for cooking.
27,850-4 Halibut fish-hooks.
27,855-6 Carved sticks, "Indian Cradle Supports."
27,857 Big spoon, (plain)
27,858 Small stone axe.
27,859-60 Stone axes, with handles, as used in getting cedar boards from a tree.
27,861 Bone implement, for removing inner bark from hemlock.
27,862 Wooden dipper.
27,863 War club handle.
27,864 New Wood Box, old model.
27,865 Copper rattle.
27,866 Painted war club.
27,867 Large dance whistle.
27,868-9 Small black slate totems.
27,870 Carved slate-knife.
27,871 Scalloped edge dance implement, "Official Sceptre."
27,872 Painted clam shell.
27,873 Small extension basket.
27,874 Dance drinking box.
27,875 Dance mask.
27,876-7 Baskets.
27,878 Cedar dance hat.
27,879 High crown dance hat.
27,880 Large food box.
27,881 Water box.
27,882 Carved ceremonial wand.
27,883-4 Large silver bracelets.
27,885 Silver brooch.
27,886 Silver stick pin.
27,887 Pair of silver ear-rings.
27,888-93 Assorted horn spoons.
27,894-6 Small coppers.
27,897-8 Copper bead ornaments.
27,899-900 Bone discs.
27,901 Stone knife,
27,902-5 Gambling "sticks" (bone).
27,906 Bone chisel.
27,907 Whalebone cedar bark beater.
27,908-9 Seal-bone gamblers
27,910 Bird from dance mask.

27,911 War spear "carved whalerib point."
27,912 Small cedar mat.
27,913-4 Copper bracelets. "One of native copper."
27,915-8 Carved stone hammers, "flat," for driving stakes in river bed.
27,919-22 Stone war clubs,—one on handle.
27,923 Carved stone halibut sinker.
27,924-30 Gambling discs, "stone."
27,931-2 Cylindrical stones used as hammers.
27,933-42 Stone axes.
27,943-65 Gambling stones.
27,966 Doctor's "floating stone" (pumice).
27,967 Stone charm.
27,968-77 Stone fragments of various relics.

27,978 Mealing stone, E. C. Watters, Auburn, N.Y.
27,979-84 Six skulls, taken from mound at Port Colborne. W. H. C. Phillips.
27,985 Piece of pottery, Cliff Dwellers, Arizona, John W. Stovall, Miss.
27,986 Tail of a rattlesnake, John Toothe, Penticton, B.C.
27,987 Clay pipe, "French," John Toothe, Penticton, B.C.
27,988 Pieces of pottery, Cliff Dwellers, Arizona, John W. Stovall, Miss.
27,989 Black slate pipe, inlaid with lead, N.W.T.
27,990 Mauser rifle, used by the Boers in South Africa, presented by by Dominion Govt.

POTTERY.

The very fine clay pot of which fig. 1 gives a good idea, was found in a mound near Port Colborne, by Mr. W. H. C. Phillips, Assistant Curator, in September.

This mound has already been referred to in our report for 1888-9, page 18.

It forms part of the property formerly known as Solid Comfort Camp, now the Humberstone Club, lying close to Lake Erie.

The Tenneseean campers made the discovery that the mound in question was of artificial formation when they were digging a hole for a flag-pole. Ever since it has been our desire to make something like a thorough examination of the mound, which has recently come into the possession of Mr. James P. Kock, a resident of Louisiana, who kindly gave us permission to do so through C. E. Steele, Esq., warden of the county of Welland This opportunity came to us during my absence from Toronto, but Dr. Colquhoun, Deputy Minister of Education, promptly authorized Mr. W. H. C. Phillips to proceed at once to the spot, the result being confirmatory of the belief that the mound had been constructed for a place of burial, as the remains (bones) of fully fifty persons were found at a depth of about five feet from the surface. All the skeletons were doubled up, and lying on their sides. In one instance a group of bodies radiated in this way, the heads being within a foot of a small brass pot some seven or seven and a half inches in diameter. As a matter of course therefore the burials were thus connected in point of time with a date subsequent to that of European occupation of the country, although this does not necessarily imply that Europeans had found their way so far west at that time, but even this contingency was not impossible. Other objects included ornaments and beads of shell (busycon perversum) glass beads of several kinds and the blade of an iron knife. This combination points clearly to a time of overlapping, perhaps as early as the first half of the seventeenth century.

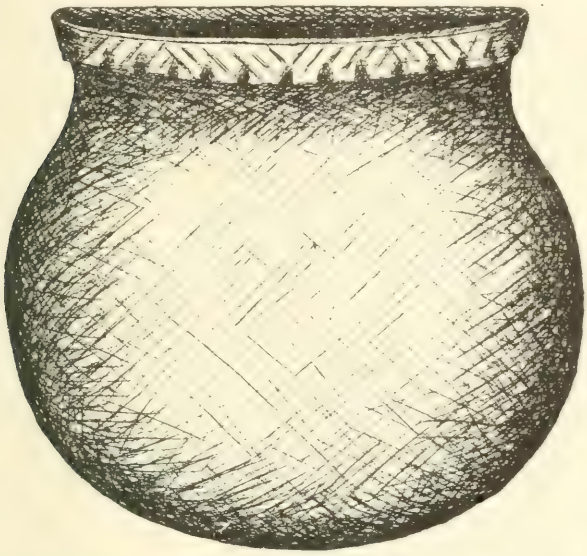


Fig. 1. $\frac{3}{5}$ dia. (27,811)

Mr. Phillips succeeded in procuring six very well preserved skulls from the mound. The people were most likely of Huron-Iroquois stock—Neutrals or Attiwandarons.

It may come as a surprise to many on this continent to learn that until very recently (perhaps, even now) pottery of this kind was made in several of the Scottish Islands, where the vessels are known as craggans.

Dr. Arthur Mitchell, author of "The Past in the Present—What is Civilization?" states that when he visited the Island of Lewis, in 1863, he found "that at a period by no means remote they (craggans) had been made in many of the villages of the Lewis," though at the time of the visit "their manufacture was chiefly, if not entirely, confined to Barvas," a village in the Island.

He was told that it was the woman's work to make the craggans, and having secured an interview with one of the makers who was "pointed out as particularly skilful," she described to him the process of manufacture. Dr. Mitchell proceeds: "The clay she used underwent no careful or special preparation. She chose the best she could get, and picked out of it the larger stones, leaving the sand and finer gravel which it contained. With her hands alone she gave to the clay its desired shape. She had no aid from anything of the nature of a potter's wheel. In making the smaller craggans, with narrow necks, she used a stick with a curve on it to give form to the inside. All that her fingers could reach was done with them. Having shaped the craggan, she let it stand for a day or two to dry, then took it to the fire in the centre of the floor of her hut, filled it with burning peats, and built burning peats all round it. When sufficiently baked she withdrew it from the fire, emptied the ashes out, and then poured slowly into it and over it about a pint of milk to make it less porous."

In a foot-note to this paragraph we read:—The following notes are taken from a letter addressed to Mr. William MacGillivray, W.S., by Dr. Alexander Buchanan of Tiree, where craggans of small size are still occasionally made. He says that the only craggans now made in Tiree are small globular vessels in which, milk drawn directly into them from the cow is warmed and given to persons showing a tendency to consumption. Milk so treated is said to be "milk without wind," and is supposed by the people to have special curative qualities. I had to take this treatment myself on Whitehill Farm, near Old Cumnock, Ayrshire, not for any particular ailment, but just on general principles. My good Aunt Agnes made me stand beside her as she milked "Kennedy," the whitest cow in the byre, and then and there I had to drink three cupfuls of the warm milk, three times a day.

Dr. Buchanan thinks "there never was any large factory of pottery on the island. Each little community had its own potter," and he goes on to state that "one hundred and twenty years ago, craggans were the only articles [dishes] in common use for culinary purposes; large ones were used as pots for boiling, others were used to keep milk, and others as milking pails; they were even used as churns."

In moralizing on this condition of things, Dr Mitchell continues, "It is desirable at once to realize, with regard to these craggans, that there is nothing known in the way of pottery more rude. They are made of coarse clay containing sand and gravel; they are not baked in an oven, but in an open fire place; they are shaped without any aid from any sort of potters' wheel; they are unglazed; they are globular and without pediment; they are nearly always destitute of ornament and

such ornamentation as does occasionally occur on them is composed of straight lines made with a pointed stick, or the thumb nail, or a piece of cord. The rudest pottery ever discovered among the relics of the stone age is not ruder than this, and no savages now in the world are known to make pottery of a coarser character.

"It is surely something very startling to be able to say this of the staple manufacture of a Scottish village in the nineteenth century. Within the century in which we live its manufacture was common all over the Lewis, all over the Hebrides, indeed, and it was not unknown in the villages on the west side of the mainland. It was an art practised by people not inferior in mental capacity to the people of Scotland generally, by people who sent their sons into the centres of progress to occupy there as good a place as any, either as artists, seamen, merchants, or professional men.

"I conclude my notice of the Barvas pottery, formulating only three inferences, which seem fairly to flow from what has been observed:

"1. That the very rudest form of art may co-exist in a nation with the highest—the Wedgewoods of Etruria with the Macleods of Barvas.

"2. That it would be wrong and stupid to conclude from this that the nation must be composed partly of savages and partly of a highly cultured and civilized people.

"3. That persons capable of immediately receiving the very highest culture may practice an art just as it is practised by the most degraded savages of whom we have any knowledge."

In arriving at these conclusions, however, Dr. Mitchell fails to reach bottom facts—he fails to sound in the deepest water.

Archæology teaches us not only that the beginnings of all arts are of the simplest, but after these have reached the highest utilitarian stage appreciable by the people who practice them, progress ceases. Henceforward, forms become stereotyped, and in a short time one of the last things that occur to the mind is the idea of attempting to effect any improvement in what always *has been*. Coupled with this, also, is the almost inevitable growth of sentiment attributing to ancient forms something akin to the fetishtic. Dr. Mitchell touches ground along this line when he writes (p. 174) "Most persons know what I refer to when I speak of stone axes or celts, but it may not be so generally known that in every part of Scotland these ancient tools or weapons are now treated by the people as possessed of a power to keep away misfortune and cure disease. It is believed, for instance, that they assist the birth of children; that they increase the milk of cows; that they cure diseases of the eye: that they protect houses in which they are kept from lightning, and that they have many such marvellous virtues. Hence it happens that a stone celt is sometimes preserved in a house with reverential care, passing down through generations from father to son. By those who so preserve them they are called thunderbolts, and it is believed that, as they have a sort of supernatural origin, they may reasonably be supposed to have supernatural powers."

"How the stone celt came to be called a thunderbolt we can only guess. It would be nothing very remarkable, however, to find such a name given to it in some one part of Scotland, or even Scotland broadly, but it becomes very remarkable when we find it given not in Scotland only, nor even in Scotland, England and Ireland, but also in France, the

Channel Islands, Norway, Sweden, Germany, Holland, Portugal, Italy, Brazil, Japan, Java, Burmah, Assam, among the Malays, in Western Africa, and in many other countries." In the following suppositious soliloquy, we have most of what underlies the superstitions relating to the craggans. "It is old—it is very old. We have never seen any person who did not know what a craggan is. We have it frequently mentioned in our household tales—witches, kelpies and the 'little people' have always used dishes of this kind when any vessel was required—it was from a craggan, or by means of a craggan that so-and-so did so-and-so when so-and-so happened, it is therefore luckier to use a craggan than it is to use any new-fangled kind of dish. Besides this, we have always had craggans in the house—without a craggan the house would not look like itself. Granny Macleod says she likes to drink from a craggan better than out of a siller cup, and that a baby will thrive better if fed from one rather than from chinaware or any new-fangled kind of pottery. It is a more natural kind of dish* and forby, we can make this dish ourselves, or buy it from our neighbor across the way, or, perhaps in the nearest clachan."

This kind of argument and belief is enough to establish the use of anything in a rural district, without any reflection on the general intelligence of the people.

The most interesting particulars are, perhaps, those connected with the making of the pots. The process throughout seems to be quite as simple as is imaginable, and, no doubt, follows very closely pre-historic methods. There is no specific mention of tempering the clay in any way, but as we are told that the material chosen contained sand, experience had evidently taught the potters that this was the best kind of clay, and that no additional tempering mixture was necessary.

* It is said that not long ago a gentleman of the old school found fault with colored glass windows in a kirk, on the plea that he thought glass should be left "juist as the

FLINTS.

It is just as likely that freak shapes in "flints" are attributable quite as much to freakishness or even to accident on the part of the maker, as to any specialty of use for which the flints may have been intended. Fig 2 represents a shape not unique, but unusual, and which is perhaps merely an exaggeration of some less pronounced and common forms, or the result of an accident in chipping on one side, so that the maker, wishing to produce something symmetrical, imitated the defect on the opposite side.

Fig. 2.

Odd forms may also be accounted for in many cases, because of re-chipping to make a damaged object serviceable for another purpose, if not for the very one to which it had formerly been applied.

Another somewhat unusual shape is shown at figure 3.

It appears to be a secondary or degraded form, resulting from the re-shaping of what has been in all probability a much larger specimen. It was found on the same farm as that on which fig. 2 was picked up, and was presented by Mr. C. N. Mitchell, of Nissouri.

Fig. 3.

Also from Mr. C. N. Mitchell, of Nissouri, is the original of figure 4, belonging to a class we have agreed to call scrapers. Similar tools are still used by the Eskimo in cleaning the flesh side of skins, and no doubt for smoothing various objects of wood, as well as for other purposes, and if we may judge from the way these are mounted our Indian people attached them to short handles of wood, antler or bone, although it is safe to say that not infrequently such scrapers were grasped directly between the thumb and forefinger, just as our present-day carpenters use bits of glass.

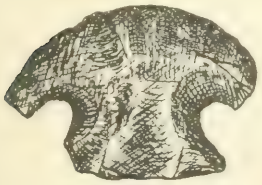


Fig. 4.

The object illustrated here (figure 5, full size) has the form of a small axe, or celt, and is of Huronian slate.

The side not shown in the cut is considerably battered as if at some time, the stone had been used as a chipping block, or small stithy, but it is the side here illustrated that exhibits most features of interest.

The circle, square and triangle are, possibly the work of an Indian, but the repeated character ⎽⎽ was certainly produced subject to European influence, if not indeed made by some white man.

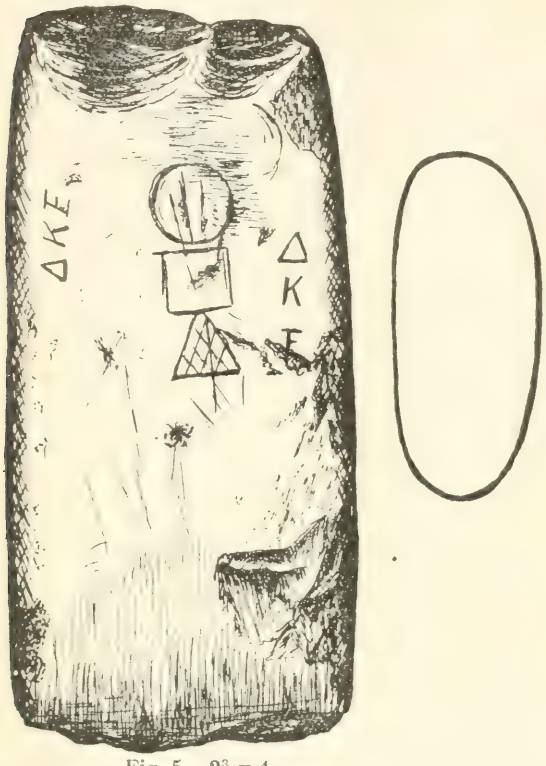


Fig. 5. $2\frac{3}{4}$ x 4.

The deltoid initial, in both cases, is peculiarly striking, and neither seems to have any connection with the chevroned triangle near the middle of the stone, and forming the lowest member of the suggestive combination, viz., circle, square and triangle. There are probably some people, the liveliness of whose imaginations will assist them in reading more or less Masonic meaning into the signs, and who is he that may be able to successfully contradict any such suggestion or contention?

The piece of stone is fully twice as thick as we usually find in perforated tablets or gorgets. A sectional outline of it at the middle is shown at the side of the cut.

This unique specimen was found on the farm of Mr. Chas. N. Mitchell, of Lakeside. Mr. Mitchell has kindly presented it with other interesting material of a similar kind to the Museum.

A gentleman who saw a paragraph in one of our Toronto dailies with an illustration of this specimen, writes, 'The signs have without doubt been made by some member of the Delta Kappa Epsilon fraternity, and have no connection with masonry. The College fraternity of which the signs given are the symbols, was organized in 1844, and was a small organization down to the '70's. There are at present two chapters in Canada—one in Montreal, and one in Toronto."

SLATE.

Slate Gorgets.

Among the interesting specimens forming the small collection presented by Mr. C. N. Mitchell, is what may be called a pendant of Huronian slate, which is unique in more ways than one. In Ontario, we seldom find any object of this kind, otherwise than quite smooth, except a few, bearing notched edges. Among fully 300 slate tablets, gorgets or pendants in our cases there is only another one, the surface of which is decorated with any kind of lines, and in this instance they are all diagonally straight forming a simple criss-cross arrangement.

In figure 6 it will be seen that the incised lines are, in the main, intentionally straight, but that we have on the lower end of one side, a few curved lines which, looked at in various ways, suggest the form of

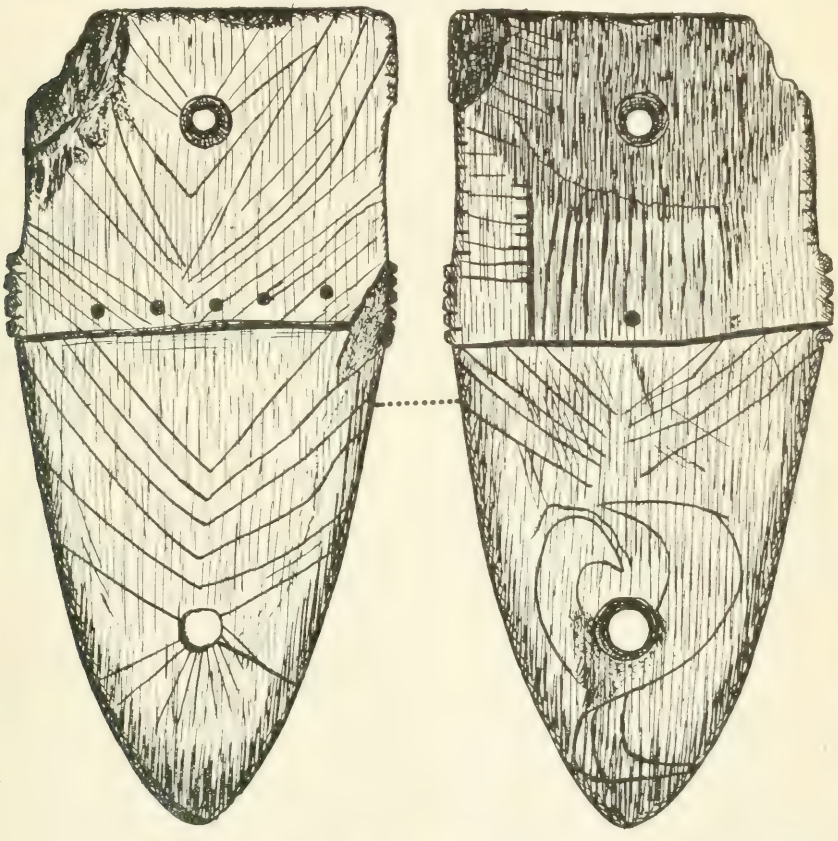


Fig. 6. 4½ x 4¼.

a bird. Only that one of the headlike drawings is turned the wrong way, the drawing might be regarded as a sort of triskelean design—something quite unheard of in this part of the world. The notches and

nicks on the corners of the upper third, where the edges are square, may have been meant as decorative, or they may have been tally-marks of some kind.

The five small spots on one side, and the one on the other indicate slight depressions made by the point of a drill.

Apart from the nature of the material, the only thing we can be sure about concerning this specimen is that it was carried by being suspended from the hole at the wide end. The inside edges of this hole are worn quite smooth. It may be noticed also that the hole was made by boring from each side, while the one near the pointed end has been almost entirely drilled from one side.

Woman's Knife.

Fig. 7 shows all that is left of an Eskimo woman's knife from Herschel Island, and was presented to the Provincial Museum by Rev. C. E. Whittaker, Anglican Missionary at Fort McPherson, in Mackenzie

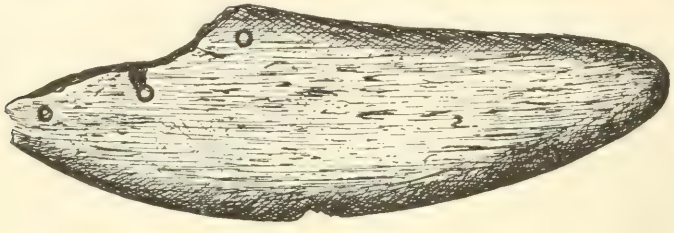


Fig. 7.—½ Dia.

Territory. The value of the specimen here illustrated consists mainly in the fact that it shows the method of effecting a repair, namely by boring holes along both of the fractured edges, and then binding the pieces together by means of a raw-hide or other thong. Many tools of this kind are provided with a strip of wood fitted neatly along the upper (straight or concave) edge as a handle—the blade being made thin to enter wedge-wise into a slit in the wood.

These so-called knives are, rather, scrapers, if, as is said, their use is to remove bits of flesh from the inside of pelts before the tanning process.

Our home Indians used implements of this kind, and as most of those in the Museum were found in the northern and eastern sections of the Province, it is allowable to hazard the guess that they had an Eskimo origin, more or less directly, for we have good reason to believe that the Innuit in their wanderings sometimes reached as far south as 45 degrees N. latitude.

Sinker.

The line-sinker of which we have a cut (fig. 8)—27,741 is from Herschel Island, and is the gift of the Rev. C. E. Whittaker. Of what

* "Among other evidences of Eskimo influence and contact, we have the semi-lunar knives of slate, ... which are very much like the Eskimo 'woman's knives.'" Mr. W. J. Wintemberg, p. 36, Ont. Arch. Rep., 1905.

is plainly a fish form, the material is what we recognize as Huronian slate, and it would be interesting to know whether such "rock" is found within the Arctic Circle, or even near to it although farther south, or that it was carried thither from the country of the Great Lakes. In our Eskimo collection we have numerous slate specimens of women's knives—some of dark red, and others of a dingy blue color, but no other of the Huronian variety.

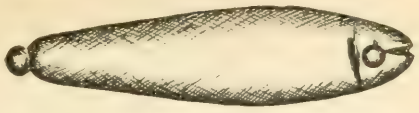


Fig. 8.—½ Dia.

On the side of the cut, not shown, there is a somewhat deep, longitudinal groove from the hole in the head to near the tail, as if it were meant to form a bed for the fish-line.

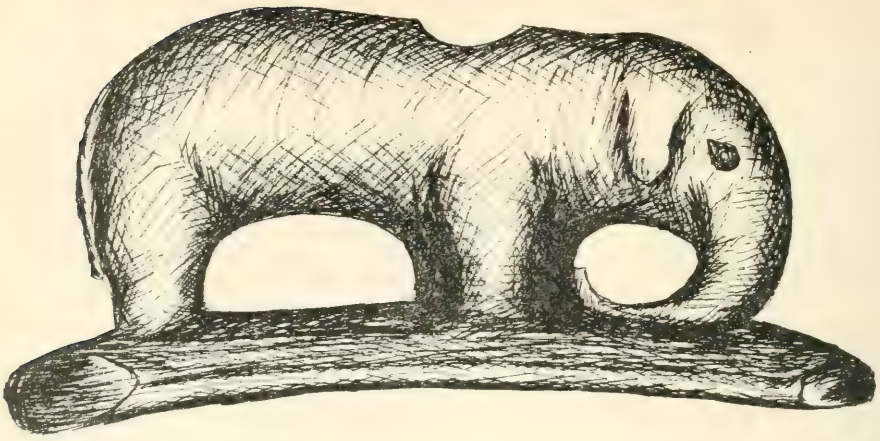


Fig. 9. Full Size.

STONE PIPES.

Davenport Elephant Pipe.

There are very few objects in any public collection which have been the cause of so much disputation as the "Elephant Pipe" in the Davenport Museum, Iowa. A cast of this pipe has been courteously supplied to the Provincial Museum by the Curator of the Davenport Academy of Sciences' Museum, through our friend Mr. J. H. Hume, and the illustration, fig. 9 (22,016), represents the object in question.

The original was found, or, it is said to have been found, a good many years ago in a mound near the city of Davenport, Iowa, by a Rev. Mr. Gass, who is reported to have discovered another pipe of a somewhat similar kind not long afterwards. It is certainly somewhat singular that the only two objects—pipes—of this pattern, were found by the same gentleman, but it is not so strange, as has been alleged, that both pipes should have come to light in the same locality, for the maker of one would be quite a likely man to produce more, supposing them to have been made contemporaneously.

As a matter of course the doubt respecting the authenticity of this pipe centres on the natural enough belief that the makers of such objects could not, or would not, attempt to produce any representation of an animal they had never seen, and the inference is that if the Davenport pipe is a genuine, pre-historic production, man and the mammoth must have been contemporaneous. It is not wholly improbable that man and the mammoth lived contemporaneously, but it is needless to repeat here even a tithe of the arguments that have been employed for and against the authenticity of the pipe. Some writers have openly charged Mr. Gass with having been the fabricator of the object as well as of the story of its find, while others who knew him intimately have just as plumply denied the likelihood of such deception on his part.

In this province, remains of the huge animal have not seldom been found at such shallow depths as to indicate comparatively recent exist-

ence. Skeletons more or less perfect are found not more than from three to six feet below the surface in swampy places. The tusk of one, attached to the skull, was for many years exposed on the surface and it was customary for the farm hands when passing it with their axes, to give it a cut, in the belief that it was some sort of half-petrified bit of timber.

Perhaps some bones found in this city were lying at the greatest depth yet reported in such cases. When the contractors were putting in a drain on Dupont Street, mammoth bones were found eleven feet, two inches below the level of the street. Only last summer when the foundation was being dug for an addition to a store on Yonge Street, leg bones of the animal were found twelve feet below the surface. In the latter case, the evidence did not point as it usually does, to the miring of the animal in what was, at one time, a swamp.

Up to the present time no piece of Indian workmanship has come to light in this province indicating any knowledge of the mammoth on the part of the old people, although some twelve or fourteen years ago it was reported that a former resident of Ontario had an "elephant pipe" but the story went on to say that he had removed to the Northwest, and his place of residence was unknown. No credence was placed in this story at the time, and nothing has occurred since to give it any.

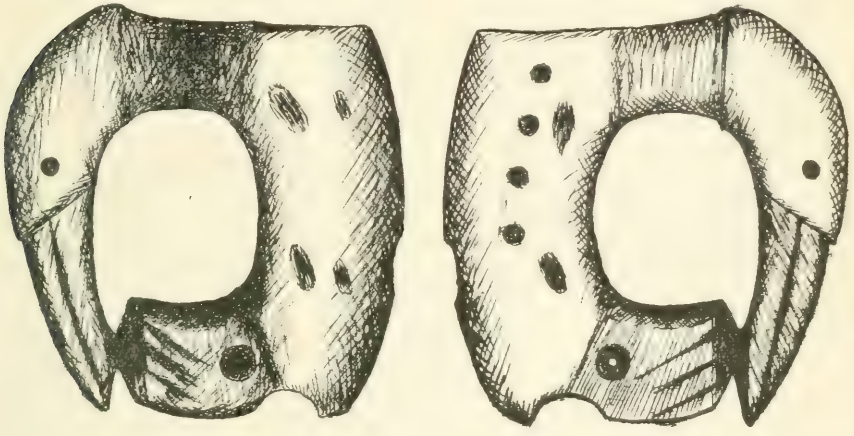


Fig. 10, 11.—$\frac{2}{3}$ Diameter.

Among the Indians, both Ojibwa and Iroquois, there exists a somewhat vague belief in a large animal that once ranged the forest, and so strong was it that it was able to crush trees that stood in its path.

In any event, it cannot but be interesting to the ethnological or the biological student to bear in mind that animals of the kind in question have "lived and moved" in Ontario, and, should opportunity offer, to examine very closely the immediate surroundings of the remains, in search of anything that may point to contemporary human presence.

Referring to the engraving figure 9 it will be noticed that the fore legs seem to be disproportionately large, but this was necessary to afford room for the bowl of the pipe. The stem hole connects with the bowl from the front end. There has been no attempt made to show tusks.

The slender proportions of fig. 9 are suggestive of an intention to represent a wading bird of some sort (heron, bittern, or rail), but it is difficult—indeed, impossible—to say which.

Much time and patience are frequently lost by the "wise" people in making guesses first, and strong statements afterwards, respecting the animals intended to be represented on what are often called effigy pipes. In some cases—as, for example, that of the owl—the semblance is fairly good; but in most instances it is very difficult to distinguish. The material itself in this case is a fine-grained sandstone. On the angle of the lower jaw, on the left side, some owner of the pipe has made what seems to be a tally, where nine slight notches indicate his count. The workmanship is much superior to that of fig. 12.

This somewhat unusual form of pipe was presented to the museum by Mrs. James, of Port Perry, on Lake Scugog, which was no doubt a favorite aboriginal resort.

Fig. 12 is a simple, but somewhat unusual, form of smoking-pipe, and comes to us through Lieut. G. E. Laidlaw, from Abram Faulkner, who found it on his farm, French Settlement, in Bexley township, Victoria county. The intention of the maker was, apparently, to produce what would look like a man, wearing a head-dress representing the head of some beast—bear, wolf, dog or fox; but the attempt was a signal failure—perhaps from the limited quantity of material, but quite as likely on account of the workman's want of skill.

Fig. 12.
Full size.

Like many of the pipes from the Balsam Lake District, this one is of dark-gray soapstone.

The bowl-hole is very small—scarcely an inch deep—very narrow at the bottom, and less than one-half inch in diameter at the top. With the exception of four short lines—two in front and one at each side near the lower end (perhaps to indicate arms and legs), there is nothing worth mentioning by way of decoration. At the base, and in front, a small hole has been bored, to meet another bored upwards, thus providing a means of attachment to a stem, as well as for suspension from the belt, or other portion of dress, when not in use.

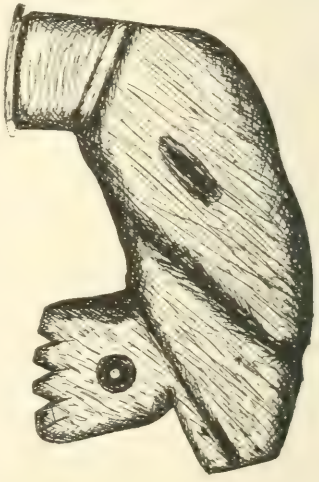


Fig. 13.

Rude as is the workmanship on the upper part of the bowl, the face, when viewed in profile, has a very marked Indian appearance.

Fig. 13 is instructive. It was found on the farm of Mr. J. J. Finney, near Burnt River, P.O., Somerville, Victoria County. The grave from which it was taken was said to contain the remains of three per-

sons. The specimen comes to us per Col. G. E. Laidlaw, of "The Fort," Victoria Road.

It shows a somewhat ambitious attempt to make a bird-pipe, but the maker was not equal to the occasion. Even in its unfinished state, it is clear that the efforts to bring it into shape were in many respects those of a bungler; and it was, perhaps, because of such treatment that the head was broken off. The fractured end has been sawn off, either by the hand that made the pipe, or by some one else equally unmechanical

Fig. 14.
½ Diameter.

BONE AND HORN.

Combs.

The comb here illustrated is the gift of the Rev. C. E. Whittaker, a missionary on Herschel Island, off the mouth of the Mackenzie River, Arctic Ocean.

In that region the Eskimo and Indians (Louchoux) are neighbors, so that it is only reasonable to look for action and reaction between the two peoples with respect to many of their manners and customs, and, perhaps, more especially, in the matter of handiwork, notwithstanding that, on the authority of Bishop Stringer as well as of the Rev. Mr. Whittaker, the peoples are not always on the best of terms.

It is sometimes doubtful whether marginal notches, on specimens of this kind, have been made for ornamental or for numeral purpose; but the regularity of the markings on figure 14 leaves no room for doubt that decoration was intended in this case.

There is not a single mark on the specimen in question to indicate the use of any metallic tool.

In the controversy about smoking pipes, the specimen here, figure 15, (25,503), would appear to lend some countenance to the notion, that the first pipes were straight. But the slight curve shown on this pipe, if it was a pipe, was simply the natural bend of the antler from which it is made. Although hollowed from end to end, there is no appearance of tool-work on the material, except that the tip has been cut off somewhat squarely, and that just beyond this there are some marks which may have been made by teeth pressure, or by some blunt instrument.

Fig. 15. (25,503) Full size.

Fig. 16 (27,099) entered in our catalogue as a "hide-scraper," was presented by Mr. E. R. Steinbrueck, of Mandan, Dak. It is of a type quite unknown in Canada, so far, but something of the kind may turn up here at any time. In all probability this shoulder-blade tool is made from the bone of a buffalo, but similar bones of the moose, and other large animals may have been used similarly. A tool of this size, seven inches long, might have been used as a spade, or as a hoe, and scratches on the surface of this specimen certainly indicate its employment in some other way than that of a "hide-scraper."

In the cultivation of maize, on light soil, an implement of this kind, with or without any kind of handle, might have been used effectively.

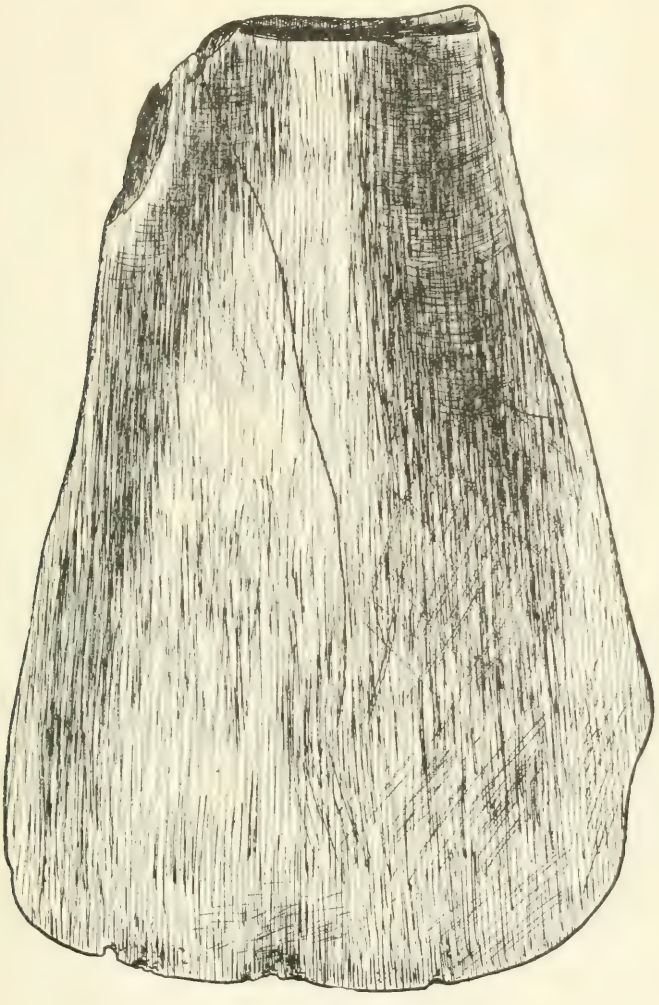


Fig. 16.

SHELL.

Shell Gorget.

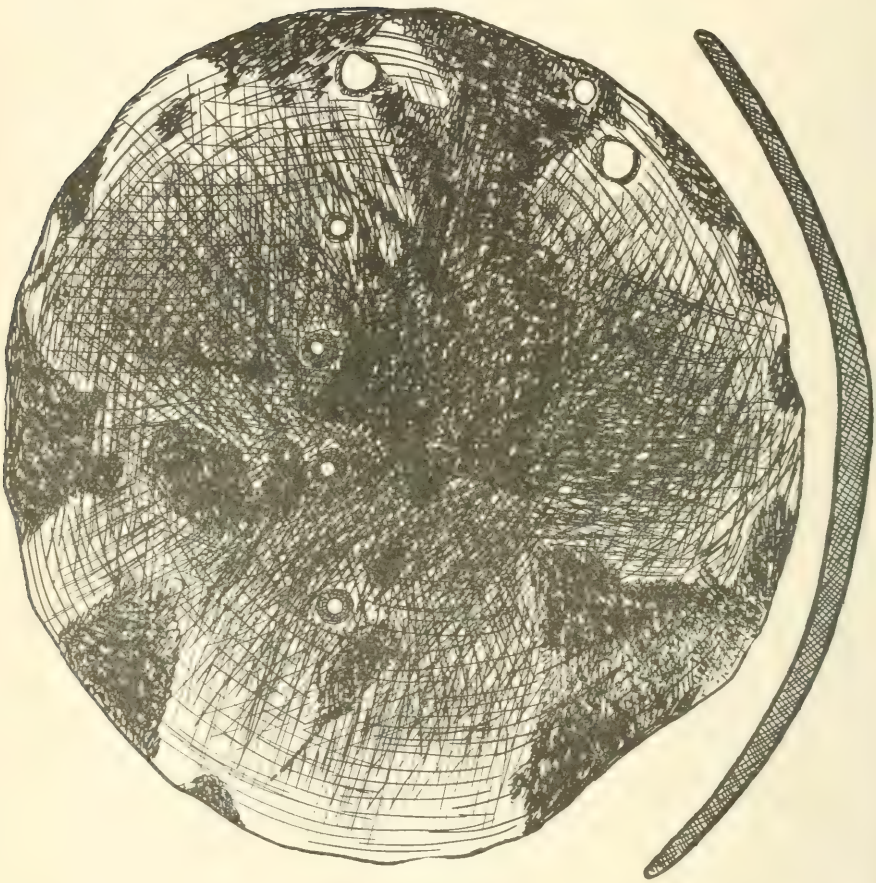


Fig. 17. Full size.

Fig. 17 (27,816) shows the appearance of the hollow side of what is called a "gorget," made from the outer coil or body-whorl of *busycon perversum* or other large shell. Up to the present time we have found only one or two shell specimens, the surfaces of which are marked by any incised-line pattern or design such as not infrequently appear in more southerly districts.

In 1899 we procured through Mr. J. S. Heath (p. 25, Ann. Arch. Rep. 1899), half of a shell gorget, on the convex side of which is engraved part of the conventionalized rattlesnake so often found on the concave sides of such objects, perhaps most notably so in Tennessee. The most deeply shaded portions in the illustration show where plainly enough, the gorget has come into contact with iron, and this will be easily under-

stood when it is mentioned that there were also found in the mound all that was left of a steel knife and a pair of scissors—European,

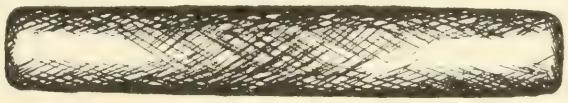


Fig. 18. (27,821.)

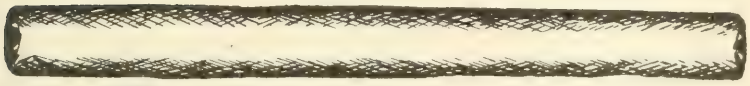


Fig. 19. (27,828.)

Fig. 20. Full size.

as a matter of course,—and a clear proof that mound-building was carried on until a comparatively recent date in Ontario,* for the metallic relics were taken from the deepest part of the mound, and therefore the less likely to be regarded as "intrusive."

Beads.

Beads of this kind when turned up by the plough are usually regarded as being of bone, sometimes as of "petrified bone," and occasionally, as of "bone petrified into stone." Appearances suggest bone, and there are many more bone beads found of this shape than there are of shell or of stone, and as comparatively few of us have ever seen shells large enough to supply material for such beads, it has come about that all beads of long, cylindrical shape are "*bone* beads." Perhaps, too, the hole is suggestive of birds' wing-bones, for the difficulty of boring such small holes naturally occurs to everybody. However, as the beads are made from the tubular, columella, or central pillar, or column, around which all the rest of a univalve grows spirally, the hole in the bead, is, therefore, not a work of mechanical art at all.

The shells used in work of this kind were not native to Ontario, or even to

* See Ann. Arch. Rep. for 1905, p. 155.

Canada, but were procured from the Coast of Florida, probably in exchange for native copper, huronian slate, furs, or other material found in our own country.

The largest beads seem to have been made from the columellæ of the genera Busycon and Strombus, while those of smaller size, from half an inch in length were from Fulgur carica, and others of even smaller dimensions.

Fig. 21 is of the commoner runtee type of which we have a good many specimens from Flos township, Simcoe county, and from Brantford township, Brant county.

This specimen differs from the others in being considerably larger.

A few of these were found along with six skulls, and a few miscellaneous specimens as elsewhere referred to, in the Port Colborne Mound, last year.

Fig. 21 shows one of the more common kind, found at the same place—in it the hole is bored from end to end.

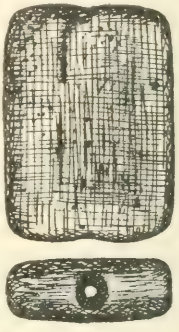


Fig. 21. Full size.

The shell beads represented by figs. 21 and 22 are of the kind sometimes called runtee, that is to say, the holes are bored not through them from side to side, but lengthwise, fig. 21, or, as in fig. 22 (27,824), half way through one side near an end to meet another short hole bored lengthwise *from* the middle of the end. It will be remembered that it is in this way holes are bored through the bases of what we call bar and "bird amulets." Shell-beads bored in this way are not by any means common, if we may judge from the fact that the specimen figured here is the only one that has come into our possession since the Ontario archæological collection was begun, twenty-one years ago.

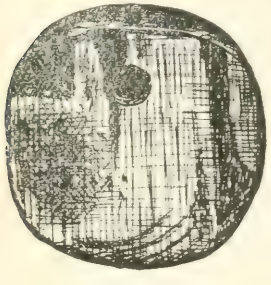


Fig. 22. Full size.

PEMMICAN BAGS.

The prairie Indians' method of preparing animal food for preservation was as simple as it was ingenious. It was "jerked" or cut into strips, sun-dried, or slightly smoked, packed closely in sacks made of skins in the natural state, but with the hairy side out. Over the contents, and from time to time, as the packing proceeded, was poured the melted fat of the animal, and it is averred that prepared in this way the contents (the pemmican) would keep even for years! It is tolerably safe to say that no Indian ever made any test of this kind intentionally, whatever may have occurred in an accidental way to show that the food would remain fresh for so long a time, but, in any event, it is pleasing to find here that our aboriginal friends were not always so utterly improvident as the story-books would have us to believe. Indeed, had they been so, the race must have disappeared long before any white man stepped on this continent. Even allowing that pemmican would keep fairly well for a few months, or even for a year, we have an illustration of the providential instinct—(if "instinct" be the right word,) and the practice of which must have been the means of avoiding much suffering and loss of life from starvation.

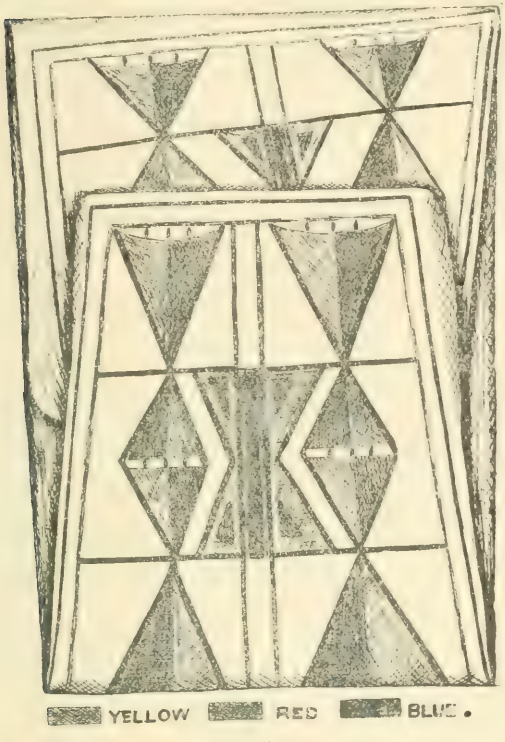


Fig. 23.

Like some other aboriginal peoples, notably those of British Columbia, our old Prairie folk, in common with other Algonkin and Iroquois tribes, had an eye for the beautiful, and we accordingly find that they occasionally provided themselves with highly ornamental pemmican bags—perhaps in which to hold small quantities for immediate household use, thus avoiding the hanging or otherwise storing of an unsightly object in the tepee. This is scarcely in accordance with the popular notions respecting our Indians, but we have the fact staring us in the face that such cases or receptacles *were* made, and if not so made for the sake of appearance, it is not easy to assign any other reason.

It would be interesting to learn whether the design bears any relation to the purpose served by the bag, because most of the bags I have seen are ornamented much after the same pattern, *i. e.*, combinations of triangles in quadrangles.

Reference should also be made to the way in which the bags or cases are formed, and when it is said that they are made exactly as are our common letter envelopes, only that the folds are provided, near the edges, with holes, not shown in the cut, for lacing purposes, nothing more remains by way of description, unless it be to state that the hair has been removed from the skin, so that the material is now like heavy vellum.

The specimen figured was procured from Mr. H. A. Van Winckel, of Kingston, and comes from near Lethbridge, Alberta.

Another one, in the Provincial Museum, came from Mr. George C. Wright, of the same city. It was made by the Peigan Indians of Alberta.

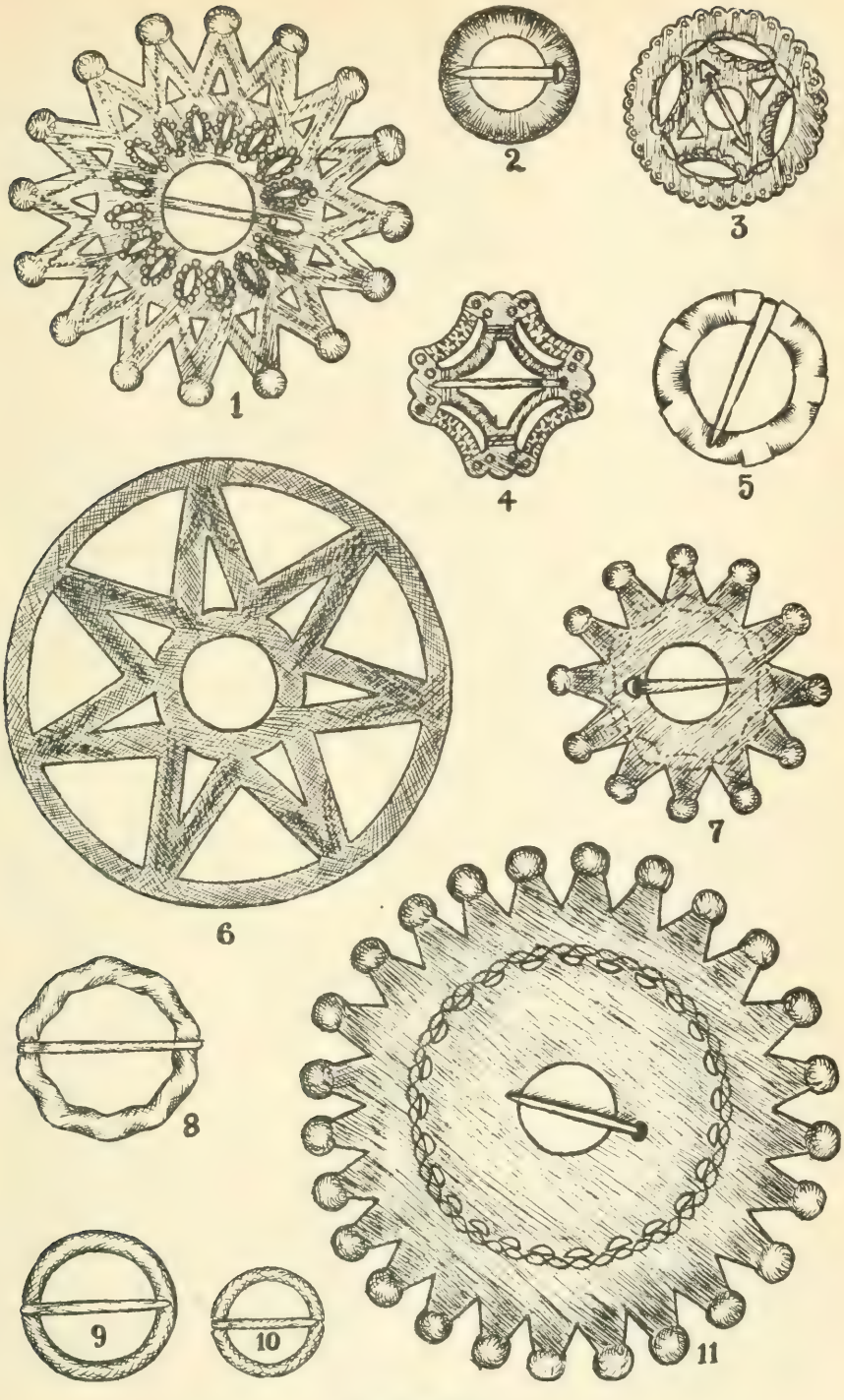
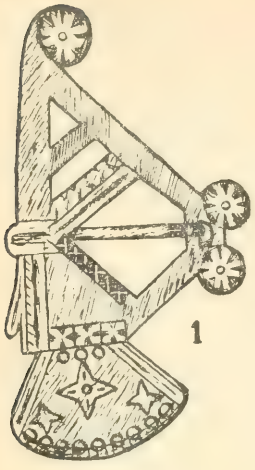


PLATE I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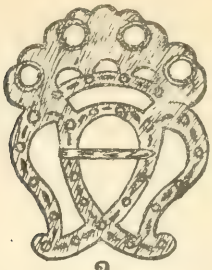
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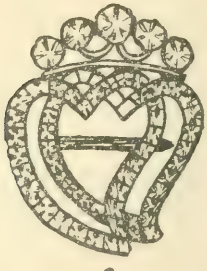
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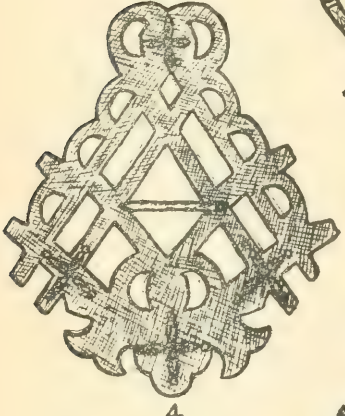
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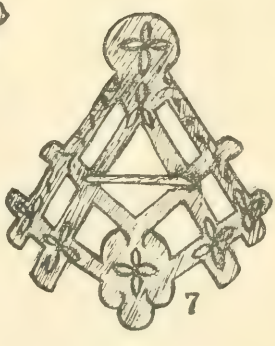
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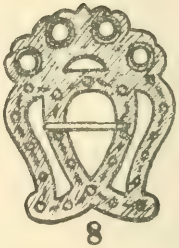
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PLATE II

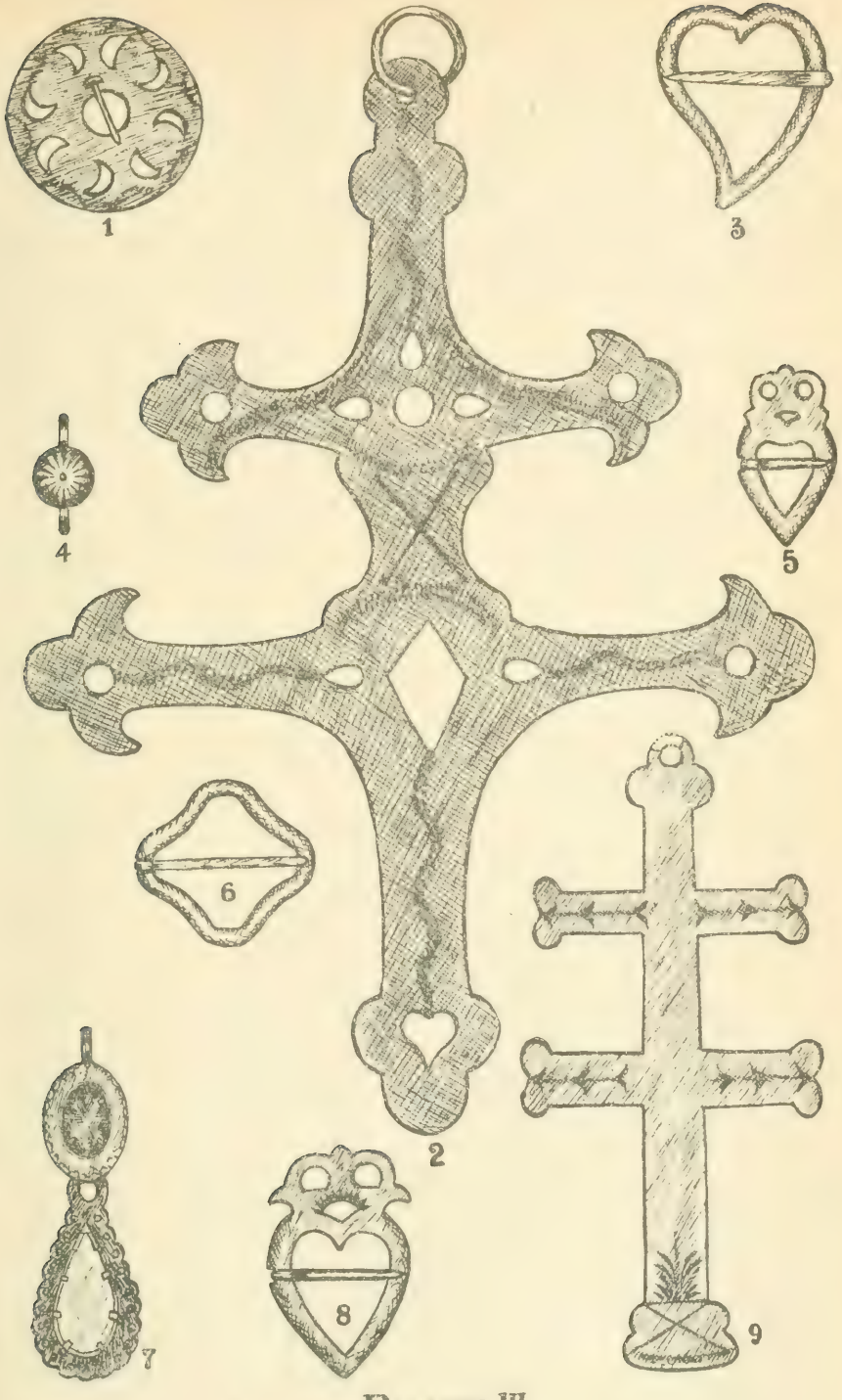

PLATE III

EUROPEAN ORNAMENTS.

The European Jack Tar, who sails in ships visiting foreign and far-away ports, is strongly disposed to do a little trading on his own account. This is especially true when his voyages bring him into contact with peoples who are savage, or semi-savage, and who possess material of various kinds which he regards as curiosities, and which are again disposable when he arrives at home. It is to such sailors, probably quite as much as to regular traders and trading companies, that nic-nacks and gew-gaws find their way among simple-minded communities.

It is even said that in former days, when voyages of this kind were much more frequent than they are now, or can ever be again, that when Jack signed papers for his ship there was a special clause in the agreement permitting him to engage in petty traffic of this kind to a limited extent. In this way numerous trinkets were easily and speedily introduced among the natives of any country to whom glass and metallic articles were novelties, and thus it seems credible that many objects of European make might become widely spread throughout any country, passing from hand to hand by way of barter among the natives long before any attempt was made at settlement by the new arrivals, or even long before the natives of places remote from a port of call had ever seen a white man. It is not, therefore, safe to conclude that there was always actual or personal European contact with our own aborigines, simply because we meet with evidences of European presence somewhere on the continent, perhaps a thousand miles distant from any coast. But whatever may have been done by means of individual effort, the regularly chartered trading companies accomplished infinitely more in this way. For a few barrels of glass beads, of fish hooks, of pocket knives, of brass buttons, earrings and the like, costing tens or even hundreds of dollars, the returns in furs would amount to as many thousands, or hundreds of thousands, and as the Indian travelled immense distances to reach trading-posts we may readily understand why the white man's workmanship must have frequently long preceded the white man himself.

On the authority of Miss Tah ne-mah-ge-wah-nok (Going down stream) a highly intelligent Ojibwa, the statement is here made that Indians as a matter of taste prefer silver to gold. This statement was volunteered one day not long ago when the lady was examining a case of silver trade-ornaments in the museum. These have been collected, mostly through purchase, from a few Iroquois and others. The objects in question almost invariably take the forms of brooches, bracelets, finger and earrings, crosses, hatbands and a few medals. The brooches, bracelets, and hatbands were mostly made from metal in thin sheet form, and quite springy as a result of having been rolled cold in the manufacture. All the patterns on these articles are the result not of casting, but of cutting and embossing, as the nature of the material demanded, and in this way they were produced very cheaply. As a matter of course the medals were made by means of dies and these decorations were given by the government and presented or sold by wealthy trading companies to distinguished Indians, or to others whose favor it was desirable to win for commercial purposes.

So far as our collection is concerned, brooches are, by all odds, most numerous, and nearly all these correspond very closely with similar objects found in the State of New York. My friend, the Rev. Dr. W. M. Beauchamp, of Syracuse, has devoted a great deal of attention to this matter, as he has to so many others connected with the early occupants of the soil, and under the auspices or patronage of the University of the State of New York, has issued several bulletins on archæology. In one of these (Archæology 8) "Metallic ornaments of the New York Indians," he refers to upwards of four hundred articles of this kind, including those of brass and copper as well as of silver, all of which he has either examined personally or had accounts of from others who own the articles.

It does not appear necessary to refer individually to each of the illustrations, many of which are but types of what our case contains. It may suffice to refer to these silver specimens as they appear, in groups

Plate I shows eleven drawings of the most common kinds of brooches. In figures 1, 7 and 11, the rounded extremities of the radiations are embossed showing slightly raised eminences on the upper side—the side which is shown in every case on this as well as on Plates II and III. Figures 2, 9 and 10 are of the plainest pattern, the only attempt at ornamentation consisting in the metal being convex in cross section on the upper side, and correspondingly concave on the lower one, a device which was adopted perhaps rather to stiffen the metal than to ornament it, although the curve served both purposes.

Figure 11, Plate I, is one of the largest of its kind (3 inches in diameter) reported to have been found in America. Dr. Beauchamp pictures one (fig 10, plate 2, N. Y. State Museum Bulletin 73) which is about the same size, and regarding which he says. "It is the largest he [the finder] has obtained or seen." The New York specimen has only twelve rays, while ours has twenty-four.

Plate II represents brooches, four of which, (figures 1, 4, 7 and 9) bear Masonic devices—the square and compasses. The appearance of this pattern leads naturally enough to the conclusion that many Indians belonged to the Masonic fraternity, but the supposition is not a correct one, notwithstanding the fact that the "ancient mysteries" are said to be well calculated to prove attractive to savages in general, but the truth seems to be that trinkets of this and other kinds were passed from hand to hand indiscriminately.

In taking up this subject on page 91 of the Bulletin of the N. Y. State Museum, Dr. Beauchamp says, "Out of a large number of these masonic brooches, over a score have been selected for illustration, in themselves far more in number than all of the [Indian] Free Masons known. Joseph Brant was a well known member of the fraternity and Red Jacket has been claimed. There were a few others, but these wore common ornaments." He proceeds to state in respect to the large number that have been found, "This abundance is proof that they had no [Masonic] significance to most of their wearers."

This was no doubt true also regarding many of the crosses. They were worn merely as ornaments in a large number of cases simply because they were white and shiny.

As will be seen from Plates II and III, the conventional representation of a heart was a favorite emblem among the Indians, who regard the

heart as the seat of courage just as common language indicates our own belief to be. When the heart symbol was employed for brooches it was seldom used singly (fig. 3, Plate III) but either in combination with a crown, or, in duplicate, surmounted by some sort of coronal decoration.

Ear-rings and finger-rings of silver do not occur frequently in Ontario. Fig. 7, Plate III is one of a pair of the former from the Six Nation Reserve, Tuscarora. The middle of the upper part is of red glass and of the lower part, green glass.

With respect to the crosses, one would suppose them to have been looked upon with something akin to religious awe, or fervor, or, at the very least, as keepsakes, but this does not appear to have been the case, if we accept the belief that they passed from hand to hand quite as freely as did brooches, rings and other silver articles. However, this may have been in a general way there can scarcely be a doubt that at least some of the recipients of such objects did regard them with special favor.

Besides the two patterns shown on Plate III we have a few others, but most of them quite small, and several of them made of brass.

Figure 2, plate III, represents one of two large specimens purchased at a country store (Six Nations) on the Tuscarora Reserve, Brant County.

When Cardinal Merry Del Val was in Toronto, opportunity was taken of his visit to the Museum, to discover if possible the origin of double-barred crosses in Canada, and their meaning in a general way. His Eminence stated that they were "archiepiscopal, pectoral, processional crosses," and he could only wonder that such articles should have been found in comparatively common use among the Indians. If we could summon the spirit of some old French fur-trader, an answer might be forthcoming.

ROCK PAINTINGS AT TEMAGAMI DISTRICT

BY W. H. C. PHILLIPS.

On information received from Wm. Brodie of Unionville, of drawings or markings that he had seen in the Temagami District Mr. W. H. C. Phillips, a temporary Assistant, was sent in June by the Department to procure photographs or drawings of them. The following is his account:

"At Latchford we procured the services of Steve Ryder, the Indian guide, who had first observed the pictographs, and we proceeded to Temagami Station by train, thence to the Hudson Bay Company's post at Bear Island, Temagami Lake, by steamer, and continued our trip by canoe for about eighty miles, including return.

The first series of paintings or drawings was found on the west side of the north arm of Diamond or Non-wa-kaming Lake, a short distance south of Lady Evelyn Falls, or about thirty-two miles from Temagami Station, on the T. & N. O. Ry.

The second series was on the west side of the south arm of Lady Evelyn Lake, just north of Lady Evelyn Falls, or about two miles from the first series.

In both cases the paintings were on the bluff shore about six feet above the water and at these points the channel is very narrow.

The formation is of limestone and apparently pieces of the rock have been broken off to give a better surface and also to protect the markings somewhat from the weather as in a number of places where pieces of rocks were broken off it left an overhanging projection.

The work was done in a dull red color and had a faded and washed-out appearance and in a few places was partly overgrown with moss. A camera and special plates had been taken along for the purpose of taking photographs, but on account of the lack of contrast between the natural and artificial colors and the impossibility of getting a sufficient exposure of the photographic plates owing to the constant rise and fall of the canoe on the waves none of the numerous plates exposed showed any traces of the drawings or paintings. It was thought better to have measurement and drawings made as it was feared the camera would not prove a success, and this was done under difficulties as the mosquitoes and black flies were very numerous and persistent.

The markings or paintings were from one-half inch to an inch in width, and although in some places the color was faint, still, for the greater part they were easily discernible at a distance of ten or fifteen feet. The series appeared to be composed of groups of markings and the drawings that were made and are here produced will show the arrangement of them. Each series did not cover a space of over thirty feet in length by about two feet in irregular width and at a reasonable height to do the work if a person was standing on the ice or in a canoe."

A comparison of the drawings made by Mr. Phillips in the Temagami country with those made by myself on Lake Massanog or Massanoga, as it is sometimes called, (pp. 48-9 in the Ontario Archæological Report, for 1893-4) cannot but convince us that the work in both parts of the country was done by the same people.

It would be utterly vain to look for any interpretation. All we can say is that "this looks like" one thing and "that looks like" another, but any attempt to form a connected story in the sense intended by the man who did the work would be only a useless effort. Even the Indians of to-day are unable to give the least hint with respect to the meaning of anything in such pictographs.

It should be mentioned here that these paintings extended along the face of the rock in one irregular line, so that they should, in our engravings, be regarded as two sentences of print or of writing, and read from left to right, one line following the other. This, however, may not be the order in which the story should read. The first series ends with the group of upright lines near the top of Plate VI.

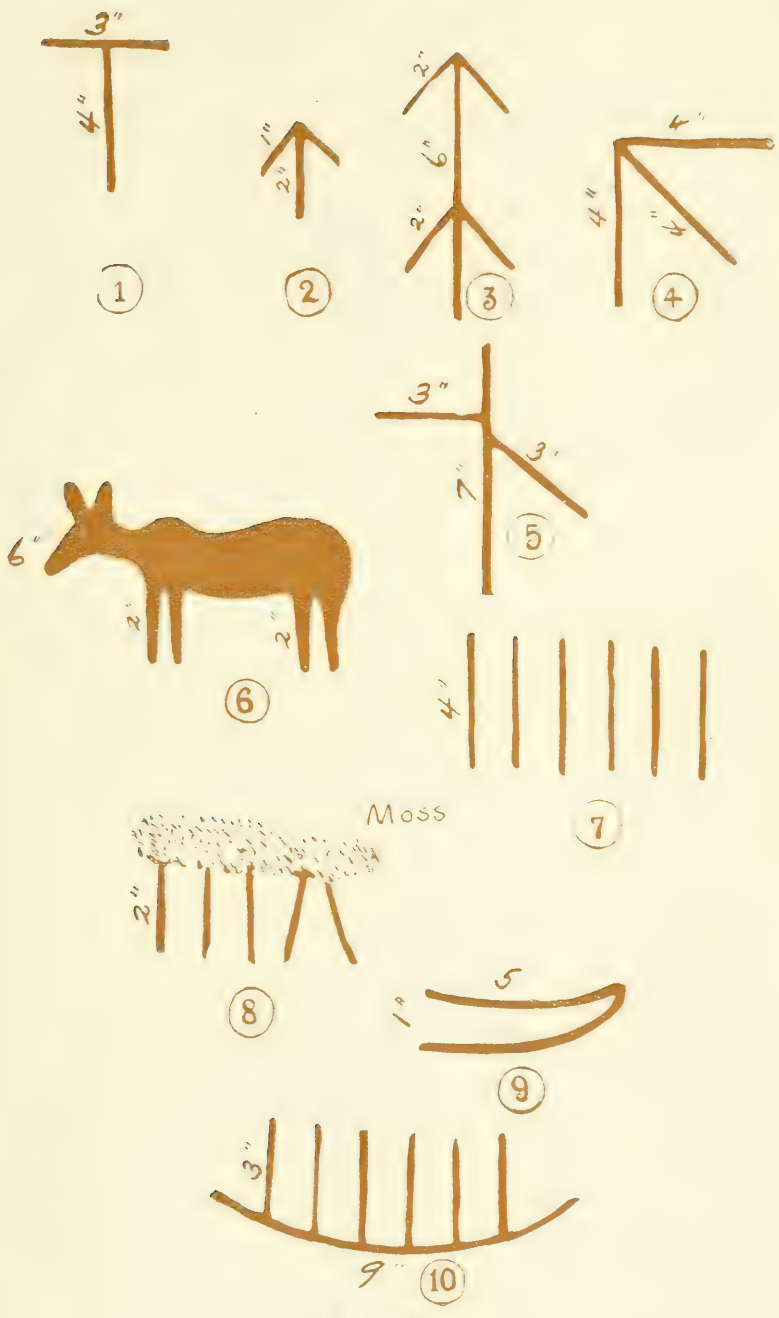

PLATE IV.

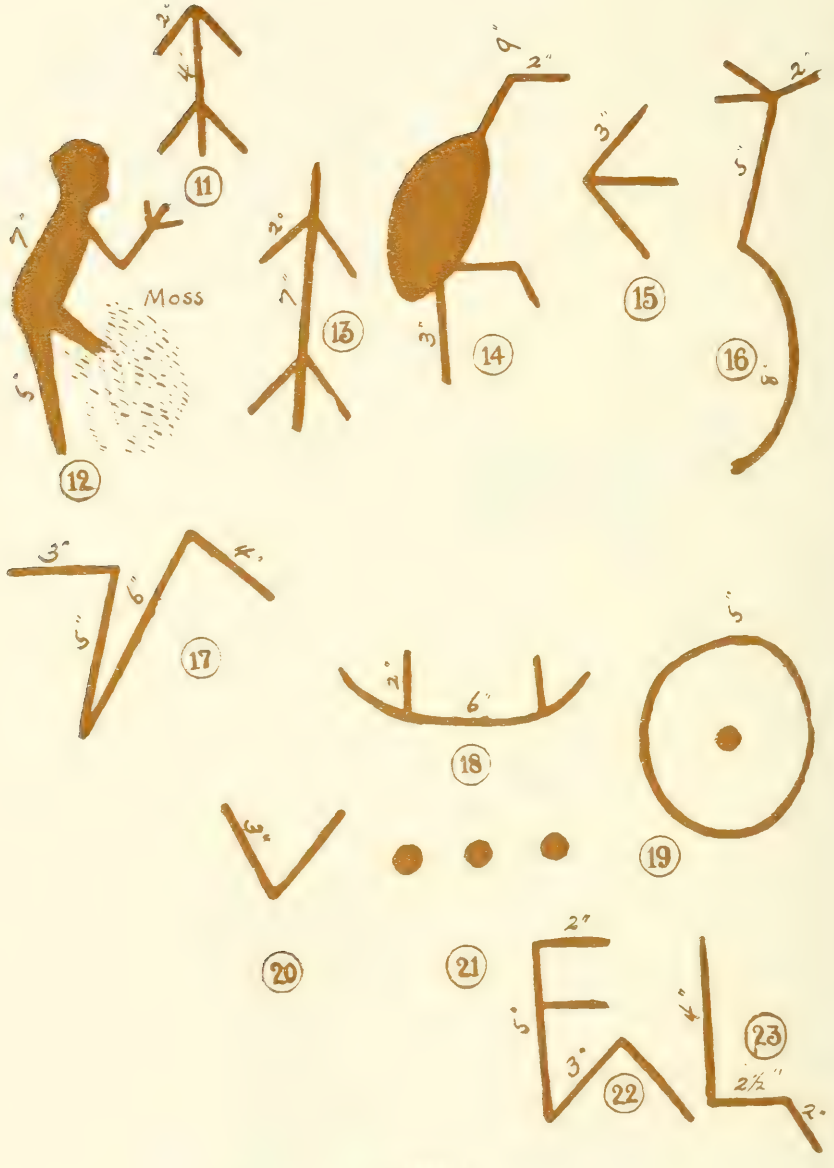

PLATE V.

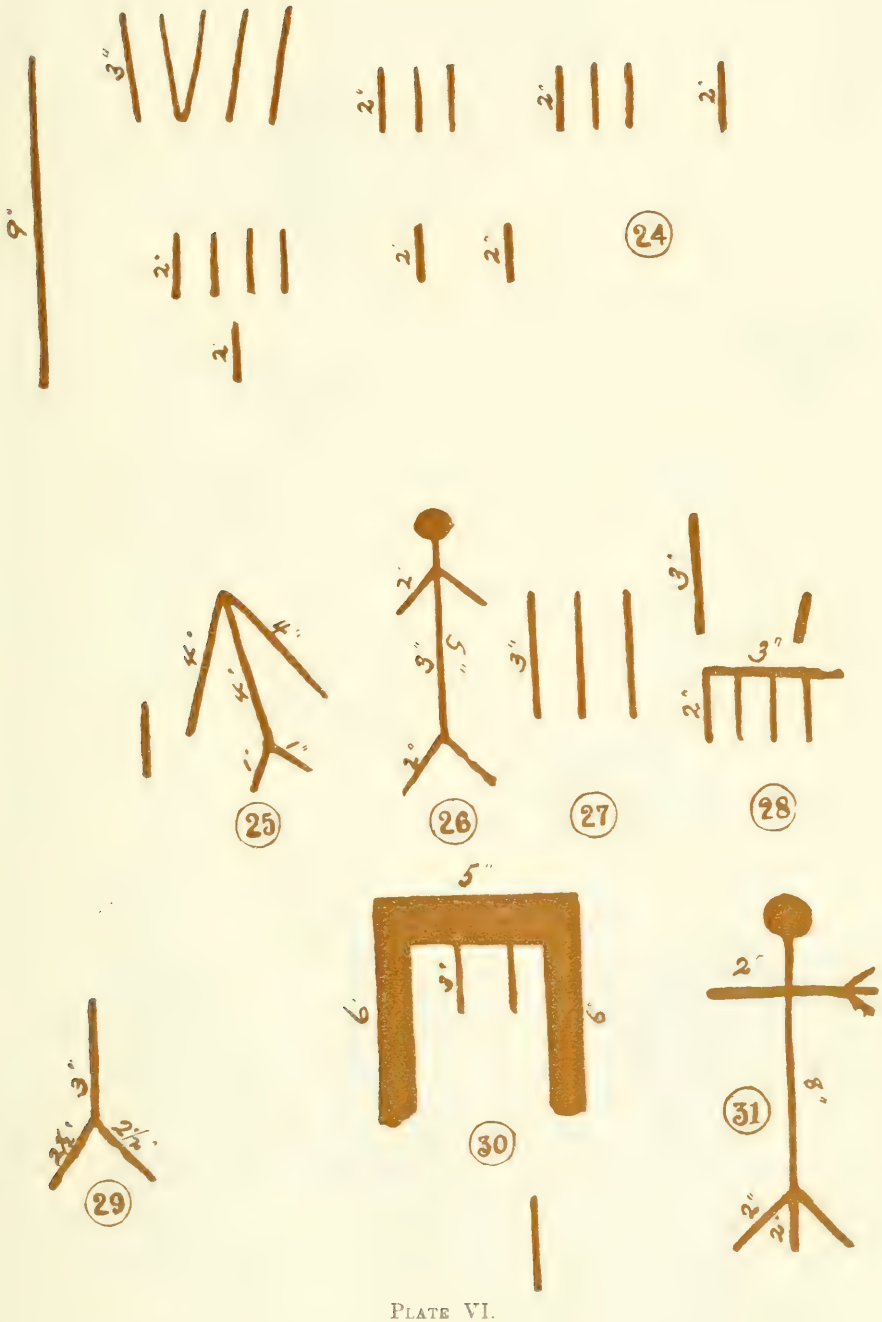

PLATE VI.

PLATE VII

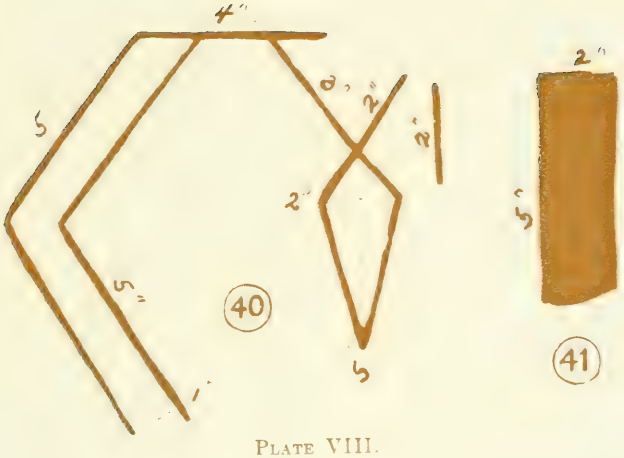

PLATE VIII.

A PRIMITIVE LOOM.

It is inevitable that man should develop along lines corresponding to a large extent with the resources of his country. Polar man employs skins for his clothing—tropical and sub-tropical man, requiring but little,

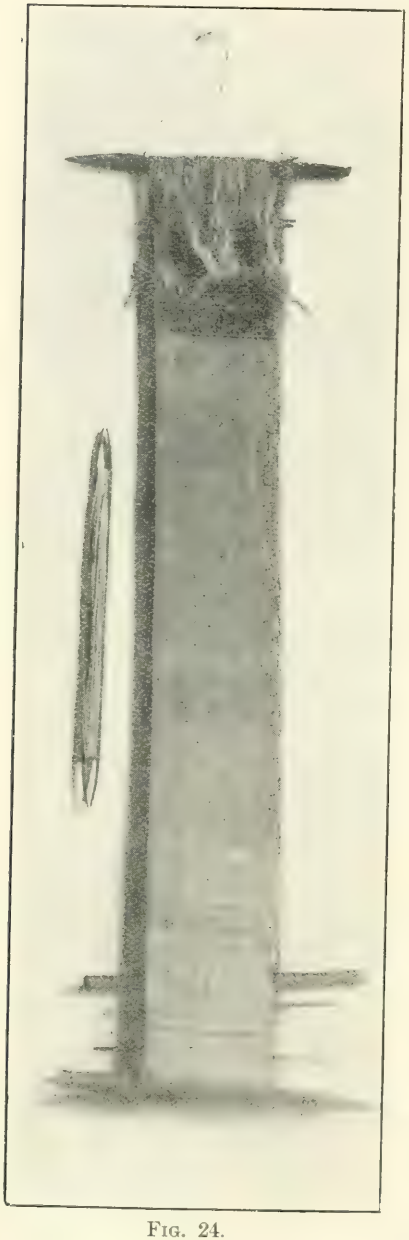

FIG. 24.

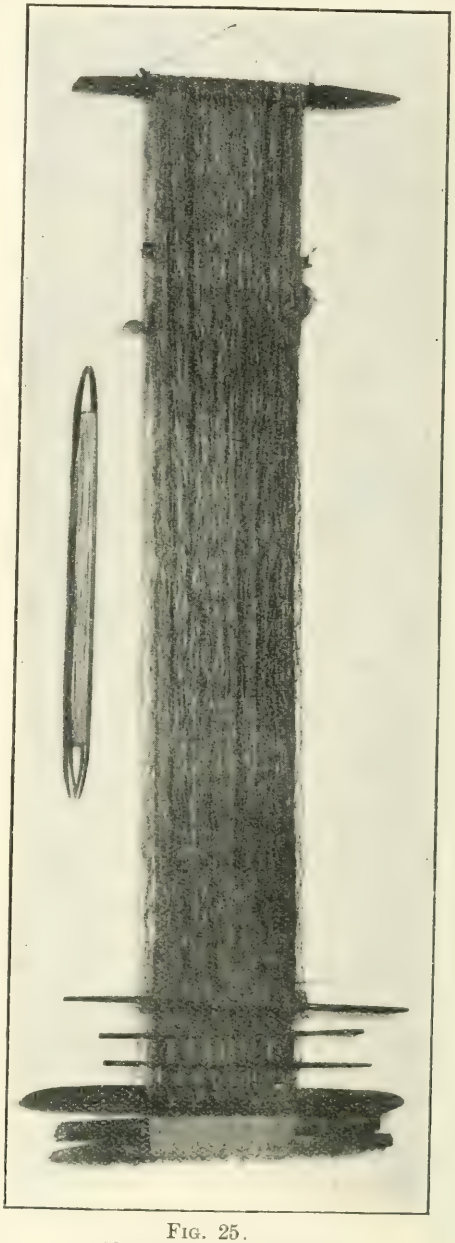

FIG. 25.
(Opposite side of Web.)

takes something lighter—something airier, when he uses garments of any kind at all. To provide the latter he may adopt purely natural products, but in course of time, he is led by various causes to furnish himself with something more lasting, more convenient, and more showy, hence—weaving. Should he have any knowledge of basketry, his way is comparatively easy, by simply substituting more pliable material in the latter case; but, in event, he reaches the loom before a great while, and it is not infrequently a matter of no little wonderment to us that he is able in his simple way to produce cloth of one kind or other, not only of excellent quality, but of great beauty in pattern and color.

In the Provincial Museum we have an Ojibwa loom and coarse rush mat, the latter in an unfinished condition—but far enough advanced to show an agreeable design in broad bands of red and blue, and worked to contain stripes with a strong resemblance to what we call the Greek fret.

In graves we sometimes find fragmentary portions of coarse cloth, evidently of native make, but nearly always in a semi-carbonized condition, so that it is impossible to decide whether any dyeing had been done.

The mere mention of Navajo blankets is sufficient to remind us of the excellent workmanship these illustrate, not only in texture, but in design and color.

The little web of what is commonly known as grass cloth, a picture of which is shown at figure **24**, was presented to the Provincial Museum only a few days ago by the Rev. Dr. Joseph Annand, who brought it from the Santa Cruz Islands, a small group in the South Pacific, about a thousand miles east of the New Hebrides, where Dr. Annand has been long established as a Presbyterian Missionary. Dr. Annand states that loom work is quite unusual among the island people, and that he knows of no other example outside of the Philippines.

The fabric is said to be made from the fibre of Pandanus leaf, or from that of a screw-pine. In any event, and simple as is the construction of the loom, the web shows a fine quality of workmanship. The neat little pattern worked in black near the upper fringed end is not very clearly seen, although is woven, or with fibre of a deep glossy black. This fine textile is 59 inches long and $7\frac{1}{2}$ inches wide.

The shuttle is shown at one side.

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ERRATUM :—Fig. 5 with descriptive matter should be under the head of SLATE.

UNIVERSITY OF TORONTO

AUDITOR'S REPORT

TO THE

Board of Governors

ON

Capital and Income Accounts

FOR THE

YEAR ENDING 30th JUNE, 1906

ADOPTED SEPTEMBER 17TH, 1906

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
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1906

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TORONTO.

UNIVERSITY OF TORONTO.

Auditor's Report to the Board of Governors on Capital and Income Accounts for the Year Ending 30th June, 1906.

To the Governors of the University of Toronto:

GENTLEMEN:—As Auditor to the late Board of Trustees, I beg to present the financial statement of the University for the fiscal year ending 30th June, 1906.

The Estimates adopted for the year 1905-6 show:—		
Expenditures		$ 252,990 67
Less those of Departments maintained by the Provincial Government		54,160 67
		$198,830 00
Available Income		127,399 50
An estimated contribution of		$71,430 50
The actual income exceeded the expectation by		$863 74
The actual expenditures fell below the estimates to the extent of		9,271 78
Add a saving arising in the cost of departments maintained by Government		341 30
A lessened contribution to extent of		$10,476 82

Hence as shown in Schedule 5-C of this report, the amount due from the Provincial Treasury is $60,953.68.

None of the financial features of the University Act of 1906 are dealt with to any extent in the within return.

There are also some earlier obligations, with accruing resources connected therewith, which have not been brought to account herein. These arise mainly under the University Act of 1905, and may be stated briefly as follows:—

The first of the Annuity payments of $30,000 per annum was collected on 30th June, 1906, and with it the outlays to that date upon the Women's Residence Building were liquidated. Future needs in this connection are provided for by a grant of 92,160 acres of wild lands.

Contributions to the extent of $300,000 to the projected Provincial Hospital are authorized, the same to be applied as a part of the purchase money of the site thereof. The City of Toronto is empowered to make a grant of $200,000, to be applied in the same manner, and you are authorized to advance from the existing Endowment Fund such amount, if any, as may be needed over and above the $500,000 to fully cover the cost of the site lands. The terms, including rate of interest, to be arranged with the

Hospital Trustees. Of the said contribution of $300,000 the sum of $50,000 is to be borne by the present Endowment Fund, and the remaining $250,000 is to be a charge upon the twenty-nine accruing yearly annuity payments of $30,000 each. These upon a basis of 3½ per cent. interest per annum (earned half-yearly) had a present value as on 1st July, 1906, of $539,056.60. From the remainder the following expenditures are authorized:—

The erection of a Museum addition to the new Science building on College Street.

The completion of Convocation Hall with additions thereto. Section 6 of the said Act of 1905 provides that $60,000 may be advanced from the present Endowment Fund by way of loan to supplement the amounts contributed by the Alumni Association and friends of the University towards the erection of the said Convocation Hall. The $60,000 is to be restored to the Endowment Fund from the proceeds of the Wild Lands grant, receipts from which have heretofore been applied upon revenue account. Nothing was received from this source during the past year. In order that future receipts may be adequate to ultimately discharge the loan of $60,000 the grant has been increased by the addition of six townships.

The erection of a new Physics Building; to the extent that the purchase money of the former site of the Parliament Buildings on Front Street, Toronto, specifically granted for this purpose, does not suffice.

Several adjustments of accounts affecting the General Endowments Fund are desirable and will doubtless be dealt with by you in due course.

This is the fourteenth return which I have had the honour to present on behalf of the late Board of Trustees and each has been a record of varying degrees of financial uncertainty. In view of the provisions of the recent Act it seems likely that in future reports these features will, happily, be absent.

W. H. CROSS,

Auditor.

Toronto, 31st August, 1906.

APPENDIX I.

Balance Sheet, 30 June, 1906.

Funds

General Endowments Fund, Schedule 1	$3,357,162 09	
Specific Endowment Funds, Schedule 2	85,267 96	
Retirement Fund, Schedule 3	106,593 76	
Trust Funds, Schedule 4	18,722 91	
Revenue Outstandings, Schedule 5	19,965 92	
		$3,587,712 64

Assets.

Site Lands, Buildings, and contents, Schedule 6		$2,173,223 28
Unproductive Lands, Schedule 7	$47,880 72	
Leased Property, Schedule 8	501,683 85	
Investments and Cash, Schedule 9	861,302 81	
Past Due Fees, Schedule 10	70 00	
University Press, Appendix VI	3,551 98	
		1,414,489 36
		$3,587,712 64

SCHEDULE 1.

General Endowment Fund.

Fund of 30th June, 1905		$3,315,924 70
Frontage Licenses;		
F. Slattery, 28 feet, Queen St. Av	$140 00	
Can. Military Institute, 30 " " " "	150 00	
		290 00
Women's Residence;		
Construction to 30 June, 1906		29,413 32
Cost of furnishings:		
1904-5 outlays	$2,194 99	
1905-6 "	3,996 51	
		6,191 50
Library, 1905-6 additions;		
Books added as per Accession Catalogue	$8,492 58	
Less 3 per cent. upon $140,781.52, for the year's depreciation	4,223 44	
		4,269 14
University Press:		
Operating balance as per Appendix VI		1,073 43
Fund of 30 June, 1906		$3,357,162 09

SCHEDULE 2.

Scholarship Trust Funds.

Blake, Matriculation	$24,952 58
Blake, Science and Moderns	3,750 00
Moss, Classics	2,000 00
William Mulock, Classics and Mathematics	2,000 00

Daniel Wilson, Natural Science	$2,000 00
George Brown, Modern Languages	1,128 34
George Brown, Medical Science	5,391 72
Mary Mulock, Classics	2,838 74
William Ramsay, Political Economy	1,009 42
Julius Rossin, German	1,000 00
Bankers, Political Science	1,200 00
John Macdonald, Philosophy	2,030 00
Physics	2,350 00
Prince of Wales, General Proficiency	950 00
Mackenzie Memorial	18,334 60
Fulton Bequest	3,291 30
Starr Bequest	5,159 60
Lyle Medal	273 06
Young Memorial	3,148 60
Gibson Matriculation	2,100 00
Board of Trade, Commercial	100 00
Reeve Scholarship	250 00
French Prose Prize	10 00
	$85,267 96

Return of 30 June, 1905	$84,907 54
Interest appropriation	4,160 42
Rent, Starr Farm	120 00
Gibson Matriculation	100 00
French Prose Prize	10 00
	$89,297 96
Scholarship Expenditures	4,030 00
	$85,267 96

SCHEDULE 3.

Retirement Fund, Beneficiaries, 30 June, 1906.

James Loudon	$10,137 92
Alfred Baker	6,611 34
Maurice Hutton	6,611 34
R. Ramsay Wright	6,611 34
W. J. Alexander	6,611 34
J. G. Hume	6,279 82
J. F. McCurdy	5,462 89
James Mavor	5,150 17
G. M. Wrong	4,367 26
A. B. Macallum	3,815 68
W. H. Fraser	3,619 74
John Squair	3,619 74
John Fletcher	3,541 25
W. J. Loudon	2,566 47
D. R. Keys	2,566 47
H. H. Langton	2,481 78
August Kirschmann	2,133 10
W. Lash Miller	2,055 32
W. S. Milner	1,950 59
J. H. Cameron	1,950 59
G. H. Needler	1,918 26
W. R. Lang	1,879 11
A. T. DeLury	1,763 29
James Brebner	1,712 65
Adam Carruthers	1,703 51
C. A. Chant	1,699 88
J. C. McLennan	1,383 36

G. W. Johnston	$1,026 34	
T. L. Walker	1,117 89	
P. Toews	619 63	
F. Tracy	539 71	
F. B. Kenrick	450 68	
F. B. Allan	450 68	
B. A. Bensley	369 88	
W. H. Piersol	269 86	
F. A. Mouré	262 72	
J. H. Faull	261 95	
A. H. Abbott	224 95	
F. J. A. Davidson	166 50	
E. J. Kylie	159 26	
J. C. Fields	121 65	
W. A. Parks	111 65	
M. W. Wallace	96 42	
S. J. McLean	70 00	
St. E. DeChamp	69 78	
		$106,593 76
Fund of 30 June, 1905	$94,087 74	
Contributions 1905-6	7,597 08	
Interest as per terms of O. C.	5,815 32	
	$107,500 14	
Withdrawal, R. G. Murison	906 38	
		106,593 76

SCHEDULE 4.

Trust Accounts.

Library Funds:		
Insurance	$2,027 33	
King Alfred Millenary Fund	10,713 37	
Phillips Stewart bequest	1,517 91	
Medical Fund	46 95	
Residence Extension Fund	1,080 96	
John Langton, Memorial	30 00	
Sir William Mulock	724 66	
Mulock Portrait Fund	7 89	
Alumnae Prize	10 00	
University Studies	989 68	
Women's Residence	1,172 50	
Physical Laboratory—Radium Fund	70 78	
Rifle Association	310 00	
Wallbridge Bequest	20 88	
		$18,722 91

Note as to Year's Transactions.

Return of 30th June, 1905	$24,129 24	
Interest appropriations	1,053 48	
Receipts during 1905-6	49,002 33	
		$74,185 05
Expenditures from		
Library Insurance Fund	$3,000 00	
Library Greek Fund	10 50	
King Alfred Millenary Fund	398 29	
Biological Supplies	17 24	
Local Lectures	10 84	
Alumnae Prize	10 00	
Phillips Stewart bequest	42 09	
University Studies	375 98	
Women's Residence	10,490 53	

Convocation Hall Fund	$40,394 46	
Medical Fund	471 80	
Physical Laboratory Radium Fund	150 41	
Rifle Association	90 00	
		$55,462 14
		$18,722 91

SCHEDULE 5 A.

Contingent Fund, 30th June, 1905		$17,065 92	
Queen St. East property sale	$15,500 00		
Less amount of account	12,000 00	3,500 00	
		$20,565 92	
Less.			
Loss upon sale of Ballard Farm, August, 1905		$100 00	
			$20,465 92
Contra.			
Granolithic Walks			500 00
			$19,965 92

SCHEDULE 5 B.

INCOME ACCRUED BUT NOT DUE.

Accounts:	30th June, 1906.	30th June, 1905.
Debentures	$6,534 89	$5,806 60
Mortgages	2,795 95	3,140 43
Park Rentals	6,277 87	6,215 70
School of Science rental	.....	154 58
Business Rentals	693 84	833 84
City of Toronto	1,500 00	1,500 00
Interest from Land Sales	1,699 19	1,491 34
Endowment Item Totals	$19,501 74	$19,142 49
Agricultural Fees	.....	357 47
Fees past due	70 00	163 00
	$19,571 74	$19,662 96

SCHEDULE 5 C.

REVENUE, 1905-6.
Receipts.

Interest:	*Estimate.*	*Actual.*
On purchase moneys	$5,869 85	$6,513 91
On Loans	9,709 62	9,621 37
On Debentures	13,524 85	13,419 40
On Bank Balances	2,000 00	1,720 89
Share cost new Medical Building	3,000 00	3,000 00
Share cost of Medical Equipment	1,117 15	1,117 15
Rents:		
University Park	13,600 00	14,187 94
Business properties	3,450 00	2,977 04
School of Science site	925 00	925 00
Medical Faculty	2,000 00	2,000 00
City of Toronto Payment	6,000 00	6,000 00

Legislative Grant, 60 Vic., Cap. 59	$7,000 00	$7,000 00
Wild Lands Sales	.....	.....
Sundry Earnings land	500 00	675 13
University and College Fees	70,000 00	70,134 63
	$138,696 47	$139,292 46
Less interest upon Trust Funds reserved	11,296 97	11,029 22
	$127,399 50	$128,263 24

Contra.

Appropriations as per estimates adopted by Board of Trustees, 28 October, 1905	$198,230 00	
Two items subsequently added thereto	600 00	
	$198,830 00	
Less unused thereof	9,271 78	
		189,558 22
Amount to be received from Provincial Treasury	$60,953 68	
Unused as per Appendix III	341 30	
		$61,294 98

SCHEDULE 5 D.

Summary of Revenue Expenditures, 1905-6.

No.	*Account.*	*Appropriation.*	*Supplementary.*	*Unused.*
1	Salaries	$119,765 00	.....	$1,669 51
2	Bursar's Office	900 00	.....	23 85
3	Registrar's Office	4,050 00	.....	565 69
4	Vice-Chancellor's Office	750 00	.....	2 00
5	President's Office	900 00	.....	310 52
6	Law Costs	1,250 00	.....	470 00
7	General Incidentals	1,600 00	.....	597 30
8	Insurance	2,500 00	.....	308 15
9	Telephones	400 00	.....	16 41
10	Convocation Expenses	1,200 00	118 00	.....
11	Examinations	15,235 00	.....	2,495 55
12	Library	6,265 00	53 93	.....
13	Grounds	5,000 00	708 80	.....
14	Main Building	7,275 00	.....	172 15
15	Biological Department	10,450 00	.....	40 95
16	Physiological Department	4,100 00	309 22	.....
17	Psychological Department	400 00	6 93	.....
18	Mathematics	450 00	142 65	.....
19	Political Science	50 00	.....	33 89
20	History	50 00	.....	32
21	Italian and Spanish	30 00	6 25	.....
22	Advertising (University)	600 00	.....	163 73
23	Incidentals (University)	250 00	37 06	.....
24	University College Departments:—			
	Classics	120 00	.....	15 20
	English	150 00	.....	.....
	French	60 00	98 30	.....
	German	60 00	1 88	.....
	Oriental Literature	60 00	.....	05
	Stationery	75 00	.....	19 62
	Printing	75 00	7 06	.....
	Advertising	75 00	.....	54 60
	Incidentals	350 00	2 30	.....
25	Gymnasium and Students' Union	2,045 00	.....	765 49
26	Dining Hall	500 00	.....	.....
27	Educational Association Reception	250 00	.....	1 00

No.	Account.	Appropriation.	Supplementary.	Unused.
28	Summer Session	$1,315 00	$47 78	.....
29	University Commission	225 00	.....	81 89
30	University Studies	1,000 00	.....	.....
31	Memorial Volume	1,250 00	.....	1,216 57
32	Lectures on Public Speaking	750 00	.....	.....
33	Trinity College	2,500 00	.....	2,156 00
34	Art Reproductions	1,000 00	.....	6 70
35	Gratuity (widow of the late R. G. Murison)	1,500 00	.....	.....
36	Unforseen and unprovided for	2,000 00	295 20	.....
		$198,830 00	$1,835 36	$11,107 14
				1,835 36
	Net unused of appropriations	9,271 78	.....	$9,271 78
	Total Expenditure from Revenue 1905-6	$189,558 22	.....	.....

SCHEDULE 6.

Site Lands, Buildings and Contents, 30th June, 1906.

Valuation 12th October, 1892, of 1,302,360 square feet of Site lands then set apart for direct use of the University		$475,361 40	
Valuation 12th October, 1892, of lands transferred in 1905 to this account:			
Land on College Street, Registered Lots Nos. 8 and 9, upon which the new Science building is erected, and Nos. 3 and 6, the site of the Chemical building		36,864 00	
Hoskin Avenue and Devonshire Place survey		175,356 70	
Unsurveyed block east of Devonshire Place 596, 322 square feet		217,657 53	
Block on S. W. Corner Bloor and North Drive		31,251 00	
Block on E. S. North Drive		44,398 50	
			$980,889 13
Valuation 12 October, 1892, of buildings then in use	$711,647 07		
Less value attached to South Lodge written off	1,000 00		
		$710,647 07	
Cost to complete Library Building		5,769 72	
Cost to complete Gymnasium Building		9,815 62	
Cost of Chemical Building		77,287 88	
Cost of Medical Building		125,000 00	
			928,520 29
Valuation 12 October, 1892, of Apparatus and Furnishings.		$38,626 00	
Chemical Equipment additions		4,975 30	
Medical Building equipment, Arts branch		20,000 00	
Museum and other outlays		22,956 47	
			86,557 77
Valuation, 30 June, 1893, of Library proper		$103,331 93	
Cost of subsequent additions less depreciation adjustments		33,226 15	
			136,558 08
Women's Residence, Site and building		$32,413 32	
" " furniture		6,191 50	
Dining Hall Equipment		2,093 19	
			40,698 01
			$2,173,223 28

SCHEDULE 7.

Unproductive Lands.

Vacant Land in Port Hope	$6,395 00	
" " near Belleville	1,755 00	
Farm lands	152 00	
U.C.C. King Street, Toronto unsold	30,000 00	
Land N.W. Corner Carlton and Ontario Streets, Toronto.	9,578 72	
		$47,880 72

SCHEDULE 8.

Leased Lands, etc.

Victoria College site	$1 00	
Wycliffe College site	2,500 00	
Observatory site	1 00	
School of Science site	18,500 00	
Land leased to City of Toronto	120,000 06	
Park Lands	239,080 00	
Toronto business property	66,038 10	
Caradoc Farm	2,000 00	
		$448,120 10
47 St. George Street, Toronto	$10,172 95	
59 St. George Street, Toronto	8,031 85	
Cumberland house	14,842 75	
Creelman house	10,000 00	
		43,047 55
Wycliffe College pavement		1,059 49
Rentals past due	985 00	
Rentals accrued but not yet due	6,971 71	
City of Toronto payment	1,500 00	
		9,456 71
		$501,683 85

Note.

Sale of business property on Queen St. for $15,500	$12,000 00	
Old wing of Women's Residence transferred to site lands	3,000 00	
Wycliffe pavement instalment	36 93	
		$15,036 93

Less.

Cost of improvements 47 St. George St	$1,172 95	
Purchase of Creelman house	10,000 00	
Increase in outstanding revenue	751 77	
		11,924 72
		$3,112 21
Return of 30 June, 1905		$504,796 06
Return of 30 June, 1906		$501,683 85

SCHEDULE 9.

Investments 30 June, 1906.

Debentures and municipal bonds	$330,676 49	
Interest past due	187 16	
Interest accrued but not due	6,534 89	
		$337,398 54
Loans secured by mortgages on real property	$184,470 42	
Advanced as premium upon fire policies	12 85	

Interest past due	$787 61	
Interest accrued but not due	2,795 95	
		$188,066 83
Unpaid purchase money upon land sales	$146,106 78	
Interest past due	9 00	
Interest accrued but not due	1,699 19	
		147,814 97
Medical Faculty Equipment advance		26,830 73
Hamilton Cataract Power & Light Co. shares	$2,000 00	
Less excess of income received	10 00	
		1,990 00
Cheque to be received from Provincial Treasury, Grant for Revenue 1905-6 deficit	60,953 68	
Deposit in Canadian Bank of Commerce	63,329 87	
University Press earnings uncollected	1,351 51	
		125,635 06
Net advances to date, New Convocation Hall		33,566 68
		$861,302 81

TRANSACTIONS 1905-6.

INWARDS.

Debenture collections	$13,466 87	
Mortgage loans repaid	28,079 35	
Purchase money collections	10,712 47	
Decrease in accrued revenue	1,398 93	
Medical Faculty payment acct. principal of Equipment	1,098 12	
Convocation Hall, received from Alumni Association	40,000 00	
" " interest thereon	394 46	
June 30, 1906, Collection of first year's annuity under Cap. 37 of 5 Edward VII.	30,000 00	
Hamliton Cataract Power & Light Co. shares, excess income	10 00	
Withdrawals from Canadian Bank of Commerce	383,127 20	
		$508,287 40

OUTWARDS.

Land sales	$15,980 00	
Debentures purchased	4,787 30	
Mortgage loan	400 00	
Excess of University Press accounts	12 84	
Excess due by Provincial Government	22,211 84	
Women's Residence building	29,413 32	
Convocation Hall payments to date upon Construction Account	74,547 82	
Deposits in Canadian Bank of Commerce	364,722 29	
		$512,075 41
Increased outstandings		$3,788 01
Return of 30 June, 1905		857,514 80
Return of 30 June, 1906		$861,302 81

DEBENTURE INVESTMENTS, 30 JUNE, 1906.

£500 Sterling, Dominion of Canada	$2,433 33	
Landed Banking and Loan Co	10,000 00	
		$12,433 33
Ontario Municipalities.		
Cornwall	$14,333 79	
Vankleek Hill	2,221 69	
Renfrew	8,216 07	

Kingston	$28,019 46	
Havelock	2,918 13	
Lindsay	22,274 34	
Owen Sound	30,887 17	
Wiarton	17,171 24	
Walkerton	17,768 67	
Goderich	6,729 88	
Windsor	18,127 32	
Chatham	8,353 03	
St. Mary's	4,698 71	
Strathroy	11,273 45	
Tilsonburg	6,337 08	
Woodstock	7,415 39	
Galt	14,231 72	
Berlin	11,266 67	
Newmarket	8,254 56	
Aurora	4,630 64	
East Toronto	9,800 00	
Toronto	19,291 59	
York	5,184 18	
Simcoe	5,024 87	
Verulam	12,388 17	
West Tilbury	3,685 35	
East Tilbury	10,961 16	
Orford	1,013 24	
Zone	675 78	
Innisfil	306 41	
Roxborough	224 56	
Burpee	1,117 49	
Blenheim	1,424 33	
Eldon	113 24	
Elderslie	1,903 78	
		$318 243 16
		$330,676 49

SCHEDULE 10.

Fees.

Total of Fees collected during 1905-6			$70,585 10
Deduct arrears of 1904-5 collected		$422 47	
" " 1903-4 "		2 00	
		$424 47	
Fees written off:			
1 Registration fee	$18 00		
1 Degree fee	10 00		
1 Laboratory fee	8 00		
1 Library fee	2 00		
		38 00	
			462 47
			$70,122 63
Add 1905-6 fees in arrear			12 00
Fees 1905-6			$70,134 63

Arrears:

1903-4 Fees		58 00	
1905-6 1 Library Fee	$2 00		
5 Laboratory Fees	10 00	12 00	
Carried to balance sheet		$70 00	

APPENDIX II.

Fees Received, 1905-6.

Faculty of Arts.

Subject.	1st year.	2nd year.	3rd year.	4th year.	Miscellaneous.
	$ c.	$ c.	$ c.	$ c.	$ c.
College fees	6,701 00	5,292 00	4,330 00	3,835 00	102 00
Penalties	41 00	23 00	32 00	27 00	.....
Dispensations	30 00	15 00	20 00	50 00	.....
Honor Certificates	1 00	5 00	.....	4 00	78 00
Matriculation	17 00	.....	5 00	.....	775 00
Ad eundem	10 00	10 00	50 00	30 00	10 00
Examination	4,306 00	4,716 00	3,525 00	2,766 00	1,140 00
Degrees	.....	.....	.....	1,586 00	110 00
Chemical supply	118 00	89 00	67 00	100 00	.....
Mineralogical "	.....	25 00	18 00	49 00	.....
Biological "	116 00	104 00	200 00	295 00	.....
Physiological "	.....	.....	2 00	73 00	.....
Physical "	75 00	41 00	143 00	80 00	.....
Pyschological "	.....	.....	68 00	90 00	.....
Medical Students :—					
Matriculation	.....	12 00	.....	5 00	.....
Ad eundem	30 00	50 00	80 00	10 00	.....
Examination	1,176 00	1,476 00	1,683 00	1,211 00	397 00
Degrees	.....	.....	.....	1,680 00	80 00
Chemical supply	372 00	396 00	3 00	.....	3 00
Biological "	248 00	396 00	3 00	.....	2 75
Physiological "	369 00	660 00	5 00	.....	2 00
Payment by Medical Faculty for Arts subjects	1,708 00	1,950 00	.....	.....	.....
School of Practical Science students	1,696 00	909 00	32 00	.....	.....
Laboratory instruction, occasional students	119 00	229 00	80 00	32 00	544 00
Teachers' course	440 00	.....	.....	.....	.....
Library	856 00	502 00	368 00	314 00	8 00
Public speaking	7 00	12 00	23 00	.....	.....
	18,436 00	16,912 00	10,737 00	12,237 00	3,251 75

Departmental Fees.

Subject.	Law.	Dentistry.	Engin. and App. Science.	Music.	Pharmacy	Pedagogy.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Matriculation	100 00	190 00	.....	10 00	130 00	.....
Examination	210 00	1,108 00	370 00	2,445 00	352 00	100 00
Degrees	170 00	735 00	340 00	.....	260 00	.....
Certificates	.....	.....	.....	532 00	.....	.....
	480 00	2,033 00	710 00	2,987 00	742 00	100 00

SUMMARY OF 1905-6 FEES.

First year	$18,436 00
Second year	16,912 00
Third year	10,737 00
Fourth year	12,237 00
Miscellaneous	3,251 75

Law	$480 00	
Dentistry	2,033 00	
Engineering	710 00	
Music	2,987 00	
Pharmacy	742 00	
Pedagogy	100 00	
Agriculture	445 00	
Gymnasium	1,514 35	
		$70,585 10

CLASSIFICATION OF SERVICES.

College Fees	$20,260 00	
Penalties	123 00	
Dispensation	115 00	
Honor Certificates	620 00	
Matriculation	1,244 00	
Ad Eundem	280 00	
Examination	26,981 00	
Degrees	4,961 00	
Chemical Supply	1,148 00	
Mineralogical Supply	92 00	
Biological Supply	1,364 75	
Physiological Supply	1,111 00	
Physical Supply	339 00	
Psychological Supply	158 00	
Medical Faculty payment for Arts subjects	3,658 00	
School of Practical Science students	2,637 00	
Laboratory instruction for occasional students	1,004 00	
Teachers' Course	440 00	
Library	2,048 00	
Gymnasium, including lockers	1,514 35	
Public Speaking	42 00	
Agriculture ($425.00 and $20.00, pd. direct)	445 00	
		$70,585 10

APPENDIX III.

DEPARTMENTS MAINTAINED BY THE GOVERNMENT UNDER 1 EDW. VII., CAP. 41.

SUMMARY OF EXPENDITURES, 1905-6.

	Estimate.	*Expenditure.*
Chemistry:		
Salaries	$11,476 00	$11,476 00
Maintenance	5,373 00	5,210 23
Physics:		
Salaries	12,550 00	12,490 00
Maintenance	6,200 00	6,208 51
Mineralogy and Geology:		
Salaries	9,041 67	8,917 67
Maintenance	7,295 00	7,291 96
Household Science:		
Instruction	1,900 00	1,900 00
Examination Expenses:		
Share of these Departments	325 00	325 00
	$54,160 67	$53,819 37

DETAILS.

SALARIES.

(1) Chemistry.

W. R. Lang, Professor	$3,000 00
W. Lash Miller, Associate Professor	2,300 00
F. B. Allan, Lecturer	1,475 00

F. B. Kenrick, Lecturer	$1,475 00	
R. E. De Lury, Fellow	500 00	
E. L. C. Forster, Assistant	500 00	
R. H. Clark, Junior Assistant	350 00	
R. B. Stewart, Junior Assistant	350 00	
J. A. M. Dawson, Junior Assistant	350 00	
E. Repath, Caretaker	600 00	
John Smith, Cleaner	276 00	
G. Donkin, fireman (8 months)	300 00	
		$11,476 00

(2) Physics.

James Loudon, Professor	$3,200 00	
W. J. Loudon, Associate Professor	2,100 00	
J. C. McLennan, Associate Professor	2,100 00	
C. A. Chant, Lecturer	1,800 00	
H. F. Dawes, Assistant Demonstrator	500 00	
Miss L. B. Johnson, Assistant Demonstrator	500 00	
F. D. Meader, Assistant Demonstrator	500 00	
W. C. Jaques, Lecture Assistant	500 00	
J. A. Gardiner, W. B. Hamilton, Class Assistants at $125	250 00	
C. A. French, C. Woodhouse, Miss E. J. Williams, Miss F. M. Ashall, Class Assistants at $40	160 00	
J. K. Robertson, A. E. Johns, Class Assistants at $15	30 00	
T. S. Plaskett, Mechanician	850 00	
		$12,490 00

(3) Mineralogy and Geology.

A. P. Coleman, Professor Geology	$ 900 00	
T. L. Walker, Professor Mineralogy	2,875 00	
W. A. Parks, Associate Professor Geology	1,800 00	
H. Montgomery, Curator New Museum (two-thirds time)	1,666 67	
R. E. Hore, Assistant	500 00	
J. S. De Lury, Assistant	500 00	
W. Stewart, Attendant, Mineralogy	500 00	
A. Enright, Attendant, Geology (8 months)	176 00	
		$8,917 67

(4) Household Science.

Miss C. C. Benson, Demonstrator	$1,000 00	
Miss M. B. Tamblyn, Instructor	700 00	
Dr. J. A. Amyot, Instructor in Hygiene	200 00	
		$1,900 00

MAINTENANCE.

(1) Chemistry.

(a) Maintenance of Building:		
Elias Rogers & Coy., fuel	$656 38	
Consumers' Gas Coy., gas	52 64	
Toronto Electric Light Coy., electric current	321 93	
City Treasurer, water	127 97	
Mrs. Repath, cleaning	99 00	
Repairs and Incidentals:		
Harrison & Robertson, repairing plumbing	196 15	
R. Robertson, repairing brickwork	75 00	
R. A. L. Gray & Coy., wiring	66 50	
Fletcher Mfg. Coy., ventilators	114 60	
Douglas Bros., repairing skylight	5 10	
R. Farthing, gallery, shelving, etc.	459 40	

D. Pike Coy., canvas	$5 70	
T. G. Rice Coy., wire cloth	15 70	
Aikenhead Hardware Coy., hardware	15 28	
R. Simpson Coy., blinds	8 25	
Wm. Cane, keys and lock	5 75	
United Factories, brooms, etc.	26 95	
Imperial Varnish Coy., shellac	2 86	
Imperial Chemical Coy., oil, etc.	24 25	
Globe Paint Coy., oil, etc.	41 25	
W. Bate, repairing lawn mower	75	
E. Repath, washing towels	19 95	
		$2,341 36

(b) Maintenance of Department:

Vereinigte Fabriken, chemicals, etc.	$1,385 11	
Lyman Bros. & Coy., chemicals, etc.	302 46	
Grasselli Chemical Coy., chemicals	141 75	
Estate E. B. Kenrick, chemicals, etc.	168 52	
Eimer & Amend, chemicals	5 70	
German Chemical Coy., chemicals	6 65	
Elliot & Coy., chemicals	30	
Freyseng Cork Coy., corks, etc.	32 00	
Ontario Rubber Coy., tubing, etc.	87 62	
T. G. Rice Coy., wire cloth	18 90	
Beaver Flint Glass Coy., tubes	1 90	
J. J. McLaughlin, gas	6 67	
Toronto Liquid Carbonate Coy., gas	2 50	
Canadian General Electric Coy., carbons, etc.	1 84	
Fletcher Mfg. Coy., tripods, etc.	37 34	
Dominion School Supply Coy., triangles	5 00	
R. Farthing, trays, etc.	27 00	
Universal Specialty Coy., duplicator	5 00	
Brown Bros., stationery, etc.	21 93	
Office Specialty Mfg. Coy., files, etc.	10 50	
Nerlich & Coy., laboratory supplies	1 25	
A. J. Reading, lantern slides	60	
J. G. Ramsey, photo supplies	1 05	
United Typewriter Coy., typewriter supplies	3 75	
United Factories, brushes, etc.	2 25	
R. W. Hollinger, soap, etc.	15 80	
Aikenhead Hardware Coy., hardware	5 53	
Lake Simcoe Ice Coy., ice	7 25	
C. W. Irwin, freight	98 20	
University Press, printing, etc.	36 92	
Prof. W. R. Lang, petty accounts	7 60	

Physical-Chemistry Sub-Department:

Bryant Press, printing new syllabus	120 95	
Vereinigte Fabriken, chemicals	156 43	
Lyman Bros. & Coy., chemicals	44 90	
Eimer & Amend, chemicals	26 45	
J. H. Thomson, chemicals	3 95	
E. R. Squibb & Sons, alcohol	7 20	
E. H. Sargent & Coy., tubes	9 10	
Beaver Flint Glass Coy., tubes	4 75	
Fletcher Mfg. Coy., vessels, etc.	45 05	
Ontario Rubber Coy., atomizer	1 50	
Canadian General Electric Coy., motors, etc.	38 76	
Aikenhead Hardware Coy., hardware	1 12	
Harrison & Robertson, connections	14 30	
T. H. Robinson, oiling clock, etc.	50	
Lake Simcoe Ice Coy., ice	18 30	
Miss Arnoldi, typewriting	29 00	
Monarch Typewriter Coy., typewriter supplies	6 50	
C. W. Irwin, freight	19 00	
E. Repath, washing towels, petty expenses	1 60	
University Press, stationery, etc.	50 87	

R. H. Clark, petty supplies	$4 07	
R. B. Stewart, petty supplies	9 86	
Prof. W. Lash Miller, petty disbursements	5 82	
	$3,068 87	
Less paid by Professor Lang from Students' Account...	200 00	
		$2,868 87

(2) Physics.

R. Muller-Uri, apparatus	$453 50
Ph. Pellin, apparatus	202 82
Vereinigte Fabriken, apparatus	95 50
I. Carpentier, apparatus	95 14
W. Wilson, apparatus	48 47
Otto Wolff, apparatus	32 16
L. Golăz, apparatus	26 72
F. E. Becker & Coy., apparatus	18 60
Emil Gundelach, apparatus	13 10
August Natterer, apparatus	12 58
Harvard Apparatus Coy., apparatus	6 25
Hartmann & Braun, apparatus	3 85
Leeds & Northrup Coy., telescopes	9 50
Johnson, Matthey & Coy., platinum bowl, etc.	69 75
J. B. Colt Coy., rheostat	11 80
G. Sparrow & Coy., cylinders, etc.	50 50
Cameron & Campbell, cylinders	1 75
Bausch & Lomb Coy., lenses, etc.	52 65
A. B. Porter, still, etc.	18 35
Wheeler & Bain, cylinders, etc.	59 43
W. G. Pye & Coy., liquid air plant, etc.	469 48
R. Robertson, furnace	18 13
Canada Cycle & Motor Coy., furnace tops, etc.	23 34
Lyman Bros. & Coy., chemicals	146 37
Eimer & Amend, chemicals	74 11
Merck & Coy., chemicals	13 14
Armbrecht, Nelson & Coy., chemicals	3 27
Canadian General Electric Coy., motor, etc.	280 00
Central Electric School Supply Coy., electrical supplies	149 53
Ontario Rubber Coy., tubing, etc.	49 18
Emil Greiner & Coy., tubes	12 90
R. Dinnis & Son, cases, etc.	125 61
J. B. Smith & Sons, tables	48 00
J. Wicksey, carpentry	3 00
J. G. Ramsey & Coy., photo materials	40 70
H. F. Sharpe & Coy., photo materials	3 30
A. J Reading, slides	24 30
Chandler, Ingram & Bell, slides	77
Art Metropole, drawing materials	58 04
Miss Flint, typewriting	8 00
Miss A. T. Reed, typewriting	7 62
Aikenhead Hardware, hardware	218 41
Dean Bros., castings	22 62
Treloar, Blashford & Coy., castings	15 46
Morrison Brass Mfg. Coy., pipe, etc.	21 91
Beardmore Belting Coy., belts	19 65
A. P. Holden, steel bar	11 80
P. W. Ellis Coy., agate jewels, etc.	2 50
John Wanless & Coy., silver rods	1 25
Booth Copper Coy., copper	87
Warren Sporting Goods Coy., shot	40
Kemp Mfg. Coy., vessels	10 00
Gowans, Kent & Coy., jars	2 45
F. B. Stevens, flask	2 75
Imperial Glass Works, glass	65
Queen City Plate Glass Coy., glass	2 30
McCausland & Son, glass	3 25

G. W. Grant Coy., oil	$15 00	
T. Rice Wire Mfg. Coy., wire goods	1 50	
J. J. McLaughlin, gas	4 20	
G. & J. Murray, gas mantles	3 00	
Milne & Coy., candles	3 45	
John Haliam, wool	3 90	
J. H. Milnes & Coy., coke	1 65	
Canada Portland Cement Coy., cement	75	
Canada Metal Coy., metal	75	
Ontario Lime Association, bricks	3 25	
F. T. Proctor, repairing stop watch	3 50	
J. P. Mill, repairing clock works	3 00	
Wm. McKendry, repairing regulator	5 00	
Lake Simcoe Ice Coy., ice	25 45	
Toronto Salt Works, salt	7 40	
Whaley, Royce & Coy., strings	2 64	
A. H. Young, framing drawings	6 80	
E. Harris Coy., brushes	3 10	
C. W. Irwin, freight	128 16	
C. M. Richardson, cartage	2 00	
Lester Storage Coy., cartage	1 50	
Brown Bros., binding cases, etc.	18 47	
Grand & Toy, stationery, etc.	6 30	
United Typewriter Coy., rent of typewriter	2 25	
Gustave Fock, books	24 72	
Students' Book Department, mathematical tables	3 60	
University Press, stationery, printing, etc.	187 76	
H. F. Dawes extra services	15 00	
W. J. Loudon, petty disbursements	54 70	
J. C. McLennan, petty disbursements	151 93	
Occasional assistance in workshop:		
W. H. Fox, mechanician	350 00	
G. Menzies, carpenter	55 30	
J. Wicksey, carpenter	10 00	
F. Hanmer, engineer	60 00	
	$4,343 51	
Less paid by Prof. J. C. McLennan from Students' Account	$ 135 00	
		$4,208 51
Share of maintenance Main Building		2,000 00
		$6,208 51

(3) Mineralogy and Geology.

(a) Mineralogy:		
Apparatus:		
Swift & Son, microscopes	$303 75	
Vereinigte Fabriken, apparatus	233 38	
J. J. Griffin & Sons, blowpipe sets	73 16	
F. Krantz, apparatus	37 38	
E. H. Sargent & Coy., still	12 00	
T. S. Plaskett, repairing balance	5 49	
C. W. Irwin, freight	17 57	
Maintenance:		
Vereinigte Fabriken, chemicals	150 00	
Eiliot & Coy., chemicals	5 15	
Lyman Bros. & Coy., chemicals	2 30	
Chandler & Massey, laboratory supplies	143 22	
Eimer & Amend laboratory supplies	65 46	
F. Krantz, laboratory supplies	33 34	
J. J. Griffin & Sons, laboratory supplies	27 69	
Lyman, Sons & Coy., charcoal, etc.	51 41	
Dodge Mfg. Coy., belting	6 39	
Ontario Rubber Coy., tubing	5 69	
White & Thomas, galvanized lining	2 90	
Queen City Plate Glass Coy., glass	1 50	

G. Sparrow & Coy., vessels	$0 50	
J. Foster, repairing microscope	1 50	
A. Coyell, stand	5 10	
W. J. McGuire & Coy., electrical supplies	1 80	
McDonald & Willson, lamp	7 60	
Wm. Cane, keys and repairs to locks, etc.	22 05	
A. J. Reading, slides	35 55	
M. J. Whitty, signs	5 90	
Art Metropole, drawing materials	3 61	
Students' Book Department, books	10 30	
Vannevar & Coy., book	4 00	
University Press, stationery, etc.	27 12	
Brown Bros., fyles	9 00	
C. W. Irwin, freight	45 85	
Wm. Stewart, freight, etc.	11 75	
Frazee Storage Coy., cartage	2 00	
T. L. Walker, petty disbursements	28 51	
Museum Cases and Specimens:		
G. N. Reynolds & Coy., cases	1,080 00	
Chas. Rogers & Sons, cases	357 80	
A. Coyell, cases	116 00	
F. Krantz, specimens	223 25	
Ward's Natural Science Establishment, specimens	139 80	
F. H. Butler, specimens	122 15	
J. R. Gregory & Coy., specimens	65 09	
W. J. Shaw, specimens	29 81	
Geological Survey, meteorite	5 00	
F. Kessler, packing rock specimens	5 00	
Beaver Flint Glass Coy., vials, etc.	14 71	
R. G. Kirby, frames for drawers	20 50	
C. W. Irwin, freight	19 55	
University Press, stationery, etc.	3 92	
R. J. Manning, clerical assistance	36 00	
T. B. Allen, clerical assistance	35 00	
W. L. Young, clerical assistance	14 25	
F. Liddle, clerical assistance	12 50	
T. L. Goldie, clerical assistance	4 00	
		$3,704 25
(b) Geology:		
Paleontology:		
G. K. Greene: fossils	$611 10	
G. W. Harper, fossils	76 50	
J. Townsend, expenses collecting fossils	102 00	
Brown Bros., binding	109 85	
Miss F. B. Arnoldi, binding	5 65	
Hunter, Rose Coy., binding	2 20	
University Press, stationery, printing	38 03	
J. Coulter Coy. boxes	16 00	
C. W. Irwin, freight	5 12	
W. A. Parks, travelling expenses	27 09	
Supplies and Sundries:		
Office Specialty Mfg. Coy., sections	170 30	
A. Coyell, cases	116 00	
J. W. Geddes, frames	6 00	
Chas. Rogers & Sons Coy., slide holders	23 00	
A. E. Long & Coy., boxes	2 50	
University Press, cards, etc.	5 67	
A. J. Reading, slides	59 30	
Art Metropole, drawing materials	7 87	
J. F. Hartz Coy., cover glasses	18 80	
Eimer & Amend, laboratory supplies	15 15	
Elliot & Coy., chemicals	9 96	
Bausch & Lomb Optical Coy., supplies	2 86	
G. Sparrow & Coy., disks	4 95	

Toronto Plate Glass Coy., glass	$2 05	
Rice Lewis & Son, hardware	16 48	
Wm. Cane, keys	4 00	
Brown Bros., stationery, etc., premium on books in hand	28 31	
Wm. Briggs, binding	7 50	
Grand & Toy, stationery	12 17	
Frazee Cartage Coy., cartage	15 75	
C. W. Irwin, freight	3 90	
W. A. Parks, petty disbursements	28 21	
Clerical Assistance in Labelling:		
Miss A. M. Young	200 00	
G. B. Balfour	192 00	
R. E. Hore	17 00	
Petrographic Microscopes:		
Swift & Son, microscopes	121 83	
Bausch & Lomb Optical Coy., camera, etc.	71 31	
Museum Cases:		
G. N. Reynolds & Coy., cases	1,431 30	
		$3,587 71
(5) Examination Expenses.		
Share of Examination expenses for Departments of Chemistry and Physics	$325 00	
		$325 00

APPENDIX IV.

1. SALARIES, UNIVERSITY AND UNIVERSITY COLLEGE.

(Excluding Departments Sustained by Government.)

1. *Faculty, University of Toronto.*

Dr. James Loudon, President	$2,300 00	
Dr. R. Ramsay Wright, Vice-President	400 00	
		$2,700 00
Modern History and Ethnology.		
Geo. M. Wrong, Professor	$3,200 00	
E. J. Kylie, Lecturer	1,400 00	
A. G. Brown, Occasional Assistant (part time)	300 00	
		4,900 00
Political Science.		
James Mavor, Professor	$3,200 00	
S. J. McLean, Associate Professor (6 months)	1,050 00	
McGregor Young, Prof. of Constitutional and International Law	1,800 00	
A. H. F. Lefroy, Prof. of Roman Law, Jurisprudence, etc.	1,000 00	
		7,050 00
Mathematics.		
Alfred Baker, Professor	$3,200 00	
A. T. De Lury, Associate Professor	2,100 00	
M. A. Mackenzie, Associate Professor (two-thirds time)	1,400 00	
J. C. Fields, Associate Professor	1,900 00	
J. C. Fields, Associate Professor, arrears	83 33	
J. G. Parker, Fellow	500 00	
		$9,183 33

Biology.

R. Ramsay Wright, Professor	$3,200 00	
B. A. Bensley, Lecturer in Zoology, etc	1,600 00	
W. H. Piersol, Lecturer in Histology, etc	1,300 00	
E. Boyd, Lecture and Laboratory Assistant	500 00	
A. G. Huntsman, Class Assistant	250 00	
M D. McKichan, Class Assistant	150 00	
Wallace Scott, Class Assistant	100 00	
A. J. Mackenzie, E. A. McCulloch, H. G. Wilson, E. C. Cole, C. M. Hincks, } Class Assistants at $50	250 00	
A. Pride, Sub-Curator of Museum	750 00	
D. Clark, Attendant and Caretaker	600 00	
H. Sherman, Laboratory Attendant	302 00	
Sub-Department of Botany:		
J. H. Faull, Lecturer	1,375 00	
R. B. Thomson, Instructor	1,000 00	
		$11,377 00

Physiology

A. B. Macallum, Professor	$3,200 00	
V. E. Henderson, Demonstrator	700 00	
A. C. Hendrick, Class Assistant	125 00	
F. R. Miller, W. B. Large, E. Fidlar, D. A. L. Graham, J. MacLaughlin, } Class Assistants at $100	500 00	
W. F. McPhedran, A. Henderson, W. H. Cronyn, E. M. Henderson, J Graham, Miss M. L. Menten, G C. Gray, } Class Assistants at $60	420 00	
		$4,945 00

Italian and Spanish.

W. H. Fraser, Professor	$2,900 00	
F. J. A. Davidson, Lecturer	1,175 00	
W. H. Fraser, duplicate lectures at Trinity under federation agreement	300 00	
F. J. A. Davidson, duplicate lectures at Trinity under federation agreement	500 00	
		$4,875 00

Philosophy.

A. Kirschmann, Professor	$2,700 00	
F. Tracy, Lecturer	1,800 00	
A. H. Abbott, Lecturer and Laboratory Assistant	1,400 00	
W. G. Smith, Lecturer and Laboratory Assistant	1,000 00	
T. R. Robinson, Lecturer	800 00	
F. L. Barber, D. Dix, Miss M. H. Strong, } Class Assistants at $200	600 00	
W. McNamara, Laboratory Attendant (one month)	25 00	
J. Allan, Laboratory Attendant (five months)	125 00	
F. Tracy, duplicate lectures at Trinity under federation agreement	200 00	
		$8,650 00
		$53,680 33

2. *Faculty, University College.*

ETHICS.

J. G. Hume, Professor	$3,200 00	
		$3,200 00

GREEK.

Maurice Hutton, Professor	$3,200 00	
A. Carruthers, Associate Professor	2,000 00	
W. H. Tackaberry, Instructor	900 00	
		$6,100 00

LATIN.

J. Fletcher, Professor	$3,200 00	
W. S. Milner, Associate Professor	2,100 00	
G. W. Johnston, Lecturer	1,800 00	
A. G. Brown, Instructor (part time)	700 00	
		$7,800 00

ORIENTAL LITERATURE.

J. F. McCurdy, Professor	$3,200 00	
R. G. Murison, Lecturer (2 months)	300 00	
T. Eakin, Lecturer	1,000 00	
C. A. McRae, Instructor	800 00	
		$5,300 00

ENGLISH.

W. J. Alexander, Professor	$3,200 00	
D. R. Keys, Associate Professor Anglo-Saxon	2,100 00	
M. W. Wallace, Lecturer	1,600 00	
		$6,900 00

FRENCH.

J. Squair, Professor	$2,900 00	
J. Home Cameron, Associate Professor	2,100 00	
St. Elme de Champ, Instructor	1,250 00	
		$6,250 00

GERMAN.

W. H. Vander Smissen	$2,900 00	
G. H. Needler, Associate Professor	2,000 00	
P Toews, Instructor	1,250 00	
		$6,150 00

UNIVERSITY COLLEGE GENERAL.

Dr. M. Hutton, Principal	$400 00	
Mrs. H. Campbell, Dean of Women's Residence (6 months)	500 00	
Mrs. L. Salter, Lady Superintendent (6 months)	300 00	
		$1,200 00
		$42,900 00

3. *Administrative Departments and General Service*

BURSAR'S OFFICE.

F. A. Mouré, Bursar	$2,400 00	
G. A. Harcourt, Clerk and Bookkeeper (5 months)	416 66	
H. J. Bolitho, Fees Clerk	1,000 00	
H. J. Bolitho, Fees Clerk, (arrears)	200 00	
Miss A. M. Gall, Clerk	500 00	
		$4,516 66

REGISTRAR'S OFFICE.

James Brebner, Registrar	$2,000 00	
Miss A. W. Patterson, Registrar's Assistant	850 00	
Miss E. M. Dickson, Assistant, etc	420 00	
Miss L. G. Stoner, Stenographer	420 00	
Miss M. White, Stenographer	360 00	
		$4,050 00

LIBRARY.

H. H. Langton, Librarian	$2,400 00	
Miss M. H. Buchan, 1st Assistant	650 00	
Miss F. B. Arnoldi, 2nd Assistant	600 00	
Miss Hester Young, Cataloguer	500 00	
Miss E. Aldridge, Assistant Cataloguer, (7½ months)	216 00	
Miss F. E. Brown, Delivery Clerk	180 00	
Miss E. Creighton, Delivery Clerk	160 00	
Miss F. M. Wicher, Delivery Clerk	20 00	
S. H. Fussell, Caretaker	600 00	
		$5,326 00

GYMNASIUM.

W. G. Wood, Secretary Athletic Association (6 months)	$300 00	
J. C. Sherry, Secretary Athletic Association (6 months)	300 00	
A. Williams, Instructor	1,000 00	
G. Hare, Caretaker	700 00	
		$2,300 00

GENERAL SERVICE.

F. Darling, Architect	$100 00	
Robt. Martin, Bedel (with free house)	700 00	
F. Hanmer, Engineer (with house and fuel)	650 00	
A. McConnell, Fireman (8 months)	320 00	
J. Wicksey, Carpenter	700 00	
C. E. Bradshaw, Janitor	600 00	
G. Trotter, Gardener (with house)	500 00	
J. Laballister (for self and wife) cleaners	540 00	
S. Richardson, cleaner	420 00	
W. Henry, messenger	192 50	
G. Hagen, nightwatchman	600 00	
		$5,322 50
		$21,515 16
Total (excluding Departments sustained by Government)		$118,095 49

2. BURSAR'S OFFICE.

Grand & Toy, stationery and office supplies	$105 93	
Brown Bros., account books	33 50	
Office Specialty Mfg. Coy., desks	70 00	
Carswell Co., Ontario Statutes	10 75	
The Bursar, postage, $150; petty disbursements, $129.29.	279 29	
University Press, printing estimates, etc	76 68	
W. H. Cross, auditor's remuneration	300 00	
		$876 15

3. REGISTRAR'S OFFICE.

University Press, stationery	$244 69	
Grand & Toy, Office supplies	47 55	
National Typewriter Co., typewriter and repairs	135 00	
Hutchinson & Co., minute books, etc	23 45	
C. M. Richardson, cartage	1 00	
Fletcher Mfg. Coy., fender irons	3 25	
The Registrar, petty disbursements	100 00	
The Bursar, postage supplied	775 00	
R. J. Hamilton, ocasional assistance (including University Press work)	350 00	
J. Squair, editing Calendar	100 00	
University Press, printing	224 21	
University Press, printing Calendar and Curricula	1,480 16	
		$3,484 31

4. Vice-Chancellor's Office.

Hon. Chas. Moss, Honorarium as Vice-Chancellor	$400 00	
Hon. Chas Moss, expense indemnity	348 00	
		$748 00

5. President's Office.

W. H. Fraser, allowance as Secretary to President	$200 00	
Weekly Sun, subscription	2 00	
N. Y. Evening Post, subscription	9 10	
Miss A. W. Patterson, subscriptions to newspapers	6 00	
A J. Reading, photographs	46 10	
Miss F. B. Arnoldi, binding	2 25	
J. R. G. Murray, tracings of plans	5 00	
Grand & Toy, office supplies	3 50	
University Press, printing and stationery	19 04	
The Bursar, postage supplied	45 00	
Mrs. A. T. Watt, telegraphic expenses	9 64	
C. E. Bradshaw, expressage	1 00	
Townsend's Livery, cab hire	5 00	
Doane Bros., cab hire	8 75	
Dominion Automobile Coy., rent of automobile	16 00	
The President, travelling expenses	87 40	
Dr. J. C. McLennan, travelling expenses, representing President	44 65	
Dr. J. H. Faull, travelling expenses, representing President	36 20	
Prof. A. B. Macallum, travelling expenses, representing President	17 60	
R. B. Thomson, travelling expenses, representing President	14 35	
Prof. A. Baker, travelling expenses, representing President	10 90	
		$589 48

6. Law Costs.

John A. Paterson, K.C., legal services as solicitor to University	$800 00	
Less mortgage discharges, etc., paid by the parties concerned	40 00	
		$760 00
P Irving, services re Ballard Sale		20 00
		$780 00

7. General Incidentals.

Stinson & Hollwey, commissions on sales, Queen Street property, etc.	$670 20	
F. A. Benson, commissions on sales, Port Hope lots	24 00	
J. Fletcher, claim for damages *re* old Wycliffe Building	100 00	
Speight & Van Nostrand, surveying	59 50	
H. J. Browne, plans	9 00	
American Bank Note Coy., lithographing annuity certificates	140 00	
		$1,002 70

8. Insurance.

Brought forward from 1904-5		$1,564 58
British America Assurance Coy.:		
Insurance, Convocation Hall	$70 00	
" " workmen's risk	30 00	
Women's Residence, " "	5 50	
" " contents	29 75	
Printing Plant	51 25	
		$186 50

London & Lancashire Insurance Coy.:		
Insurance, Convocation Hall	$70 00	
" " workmen's risk	30 00	
Women's Residence	95 00	
" " workmen's risk	41 50	
		$236 50
Western Assurance Coy.:		
Insurance, Convocation Hall	$70 00	
" " workmen's risk	30 00	
Women's Residence	45 50	
		$145 50
Hartford Fire Insurance Coy.:		
No. 47 St. George Street, workmen's risk	.....	9 00
Norwich Union Fire Insurance Coy.:		
Howard Property	.....	16 00
Royal Insurance Coy.:		
Buildings, Starr farm	.....	15 00
John A. Paterson, K.C.:		
Adjustment on purchase of Creelman House	.....	18 77
		$2,191 85

9. Telephones.

Bell Telephone Coy., Telephone Service:		
Bursar's Office	$60 92	
President and Registrar's Office	61 75	
Chemical Building	50 00	
Printing Bureau	50 00	
Main Building	50 00	
Library	60 92	
Women's Residence	50 00	
		$383 59

10. Convocation Expenses.

G. Harcourt & Son, hoods	$242 00	
Grenadiers Band	45 00	
Forbes Roofing Coy., roofing Convocation Hall	30 00	
A. B. Coleman, temporary flooring Convocation Hall	209 45	
Chief of Police, services of constables	4 00	
Sundry men, labor	33 75	
C. M. Richardson, cartage	85 50	
Dining Hall, garden party and share of banquet to graduating class	668 30	
		$1,318 00

11. Examinations.

(a) Remuneration to Examiners:	
Arts:	
A. H. Abbott	$127 75
Miss M. E. T. Addison	19 50
W. J. Alexander	64 50
F. B. Allan	32 25
W. T. Allison	9 50
J. W. G. Andras	74 75
A. R. Bain	21 13
A. Baker	118 55
A. J. Bell	6 00
B. A. Bensley	59 25
E. Boyd	9 25
A. G. Brown	56 25
J. H. Cameron (incl. expenses $2.25)	86 75
A. Carruthers	66 88
St. Elme de Champ	52 50
C. A. Chant	66 00
W. Clark	48 00
F. C. Colbeck	30 24

A. P. Coleman	$32 00
F. J. A. Davidson	74 25
R. Davidson	5 00
A. T. De Lury	96 22
R. E. De Lury	7 75
H. T. F. Duckworth	44 49
T. Eakin	80 00
P. Edgar	54 50
J. H. Faull	34 65
J. C. Fields	25 65
J. Fletcher	49 88
W. H. Fraser	95 50
W. Houston	21 00
J. G. Hume	108 00
T. H. Hunt	18 75
M. Hutton	46 13
G. W. Johnston	76 50
F. B. Kenrick	65 38
D. R. Keys	80 25
A. Kirschmann	25 00
E. J. Kylie	61 50
A. E. Lang	75 00
A. L. Langford	61 25
A. H. F. Lefroy	37 00
W. J. Loudon (incl. expenses $2.00)	130 70
J. Mavor	53 00
W. L. Miller	53 25
W. S. Milner	84 75
A. P. Misener	6 25
A. B. Macallum	41 50
M. A. Mackenzie	46 92
J. F. McCurdy	47 25
J. F. McLaughlin	65 25
W. S. McLay	70 00
S. J. McLean	18 50
J. C. McLennan	75 50
C. A. McRae	48 25
G. H. Needler	36 25
E. H. Oliver	58 00
J. G. Parker	34 82
W. A. Parks	85 63
W. H. Piersol	29 50
A. Primrose	18 25
A. H. Reynar	60 25
J. C. Robertson	70 13
T. R. Robinson	12 50
H. V. Routh	96 99
E. M. Sait	14 75
H. C. Simpson	25 50
G. O. Smith	64 00
W. G. Smith	61 50
J. Squair	57 00
P. Toews	36 00
F. Tracy	95 25
W. H. Vander Smissen	47 25
T. L. Walker	30 00
M. W. Wallace	52 00
R. R. Wright	104 35
G. M. Wrong	53 25
A. H. Young	57 75
J. McG. Young	87 00
A. H. Abbott (presiding)	12 00
W. H. F. Addison (presiding)	10 50
C. A. Chant (presiding)	67 50
T. Eakin (presiding)	60 00
R. Davidson (presiding)	25 50
G. W. Johnston (presiding)	34 50

J. H. Kerr (presiding) (incl. expenses $28.79)	$164 79	
A. L. Langford (presiding)	28 50	
A. E. Lang (presiding)	6 00	
W. S. Milner (presiding)	9 00	
E. M. Sait (presiding)	31 50	
Miss L. Salter (presiding)	13 50	
W. G. Smith (presiding)	28 50	
M. W. Wallace (presiding)	36 00	
J. W. Curry (attendant)	21 00	
R. T. Duffy (attendant)	31 50	
J. Hill (attendant)	30 00	
W. D. Lee (attendant)	21 00	
J. Garland (attendant)	21 00	
L. Gianelli (attendant)	22 00	
J. McEachern (attendant)	29 50	
H. H. McDiarmid (attendant)	29 50	
W. M. Mackay (attendant)	9 00	
J. C. McMurray (attendant)	29 50	
G. Midford (attendant)	15 50	
B. Plaice (attendant)	24 50	
J. C. Smith (attendant)	16 00	
P. Taylor (attendant)	36 00	
W. V. Tilley (attendant)	49 00	
J. Squair, revising lists	40 00	
J. C. Robertson, revising lists	40 00	
F. B. Allan revising lists	20 00	
A. H. Young, revising lists	20 00	
		$5,286 53

Medicine:

H. W. Aikins	$58 75	
F. B. Ailan	78 00	
H. B. Anderson	7 75	
N. H. Beemer	26 25	
B. A. Bensley	94 75	
T. J. W. Burgess	5 00	
I. H. Cameron	12 50	
C. A. Chant	78 25	
J. L. Davison	5 50	
J. T. Fotheringham	40 00	
W. Goldie	7 00	
A. R. Gordon	20 00	
F. LeM. Grasett	27 00	
V. E. Henderson	59 00	
F. B. Kenrick	86 75	
E. E. Kitchen	26 50	
C. P. Lusk	87 00	
A. B. Macallum	67 25	
J. J. Mackenzie	91 75	
J. M. MacCallum	20 00	
G. R. McDonagh	5 50	
H. C. Parsons	27 00	
W. H. Piersol	97 50	
N. A. Powell	70 25	
A. Primrose	113 75	
R. A. Reeve	5 50	
J. F. W. Ross	26 75	
R. D. Rudolf	26 75	
C. L. Starr	85 75	
C. A. Temple	20 00	
J. A. Temple	5 50	
C. Trow	13 38	
D. J. G. Wishart	13 38	
A. H. Wright	86 00	
C. A. Chant (presiding)	12 00	
T. Eakin (presiding)	12 00	
A. C. Hendrick (presiding)	31 50	

W. H. Piersol (presiding)	$33 00	
G. E. Smith (presiding)	18 00	
W. A. Scott (presiding)	22 50	
E. Allen (attendant)	18 00	
R. T. Duffy (attendant)	8 00	
J. Garland (attendant)	13 50	
W. J. Graham (attendant)	22 00	
J. McCracken (attendant)	10 50	
D. Sinclair (attendant)	19 00	
P. Taylor (attendant)	12 00	
E. Tozer (attendant)	3 50	
		$1,731 51
Law:		
A. R. Clute	$50 75	
A. W. Briggs	50 75	
		$101 50
Engineering and Applied Science:		
R. W. Angus	$82 00	
J. W. Bain	28 00	
A. P. Coleman	6 00	
J. Galbraith	12 75	
P. Gillespie	19 25	
W. W. Gray	24 00	
G. R. Mickle	24 00	
W. L. Miller	21 50	
T. R. Rosebrugh	56 00	
L. B. Stewart	37 00	
T. L. Walker	22 75	
C. H. C. Wright	37 50	
		$370 75
Dentistry:		
H. A. Clark	$11 50	
F. A. Clarkson	17 50	
H. E. Eaton	24 25	
G. G. Hume	34 00	
G. S. Martin	20 00	
Estate of J. R. Mitchell	13 50	
M. A. Morrison	17 50	
W. A. Piper	26 25	
A. Primrose	20 00	
G. A. Roberts	13 00	
G. Silverthorne	17 50	
F. N. G. Starr	33 75	
W. C. Trotter	24 00	
H. F. Dawes (presiding)	7 50	
T. Eakin (presiding)	9 00	
W. J. Graham (attendant)	7 50	
W. D. Lee (attendant)	7 50	
G. Midford (attendant)	6 00	
J. McEachern (attendant)	6 00	
W. M. MacKay (attendant)	7 50	
J. McRae (attendant)	6 00	
W. Nichol (attendant)	7 50	
J. C. Smith (attendant)	7 50	
P. Taylor (attendant)	6 00	
W. V. Tilley (attendant)	7 50	
	$358 25	
Less paid by Faculty of Dentistry	42 75	
		$315 50
Agriculture:		
W. J. Alexander	$43 25	
H. S. Arkell	55 75	
J. Buchanan	24 25	
W. H. Day	39 75	

H. H. Dean	$34 50	
S. F. Edwards	38 50	
F. C. Harrison	20 00	
H. L. Hutt	33 00	
W. P. Gamble	75 50	
H. H. Le Drew	51 77	
W. Lochhead	91 50	
Miss A. G. Rowsome	37 00	
F. Sherman, Jr.	34 00	
E. J. Zavitz	9 50	
		$588 27

Music:

J. E. P. Aldous (incl. expenses $6.00)	$53 00	
F. E. Blachford (incl. expenses $7.35)	37 35	
W. E. Fairclough	41 50	
H. M. Field (incl. expenses, $5.70)	44 20	
W. O. Forsyth (incl. expenses, $7.30)	53 80	
Albert Ham	150 50	
C. L. M. Harris (incl. expenses, $195.50)	324 50	
J. W. F. Harrison (incl. expenses, $4.90)	24 90	
St. J. Hyttenrauch (incl. expenses, $8.00)	21 30	
T. Martin (incl. expenses, $6.00)	26 00	
R. S. Piggott (incl. expenses, $16.50)	36 50	
D. Ross (incl. expenses, $2.50)	12 50	
E. W. Schuch	10 56	
R. Tandy	25 00	
J. D. A. Tripp (incl. expenses, $23.25)	89 75	
A. S. Vogt (incl. expenses, $5.75)	94 42	
F. S. Welsman (incl. expenses, $211.10)	280 40	
W. H. Ballard (presiding: expenses $2)	8 00	
J. J. Bell (presiding)	2 00	
T. Carscadden (presiding)	2 00	
H. F. Dawes (presiding)	1 50	
T. Eakin (presiding)	3 00	
W. O. Eastwood (presiding: expenses 25 cents)	2 25	
W. J. Fenton (presiding)	2 00	
J. Henderson (presiding: expenses, $4.00)	6 00	
G. L. Johnston (presiding)	3 00	
E. J. Kylie (presiding)	15 00	
C. A. Mayberry (presiding)	2 00	
F. W. Merchant (presiding: expenses, 95 cents)	5 95	
W. H. Murch (presiding: expenses, $32.00)	35 00	
Mrs. R. F. McWilliams (presiding: expenses 25 cents)	2 25	
J. R. Patterson (presiding: expenses, 55 cents)	2 55	
W. N. Ponton (presiding)	2 00	
P. F. Sinclair (presiding: expenses, 50 cents)	3 50	
W. G. Smith (presiding)	2 00	
Wm. Tytler (presiding)	2 00	
Mrs. A. Watt (presiding: expenses, $1.77)	3 77	
Wm. Watt (presiding: expenses, 10 cents)	2 10	
W. A. Bradley (expenses)	3 00	
Miss A. W. Patterson (expenses)	1 35	
J. Garland (attendant)	1 50	
C. E. Bradshaw (attendant, etc.)	5 00	
		$1,444 90

Pharmacy:

G. Chambers (incl. expenses, $12.00)	$55 00	
C. F. Heebner (incl. expenses, $53.78)	120 28	
A. Moir	23 00	
P. L. Scott (incl. expenses $4.00)	27 50	
A. E. Lang (presiding)	15 00	
W. D. Lee (attendant)	7 50	
W. J. Graham (attendant)	7 50	
D. Sinclair (attendant)	7 50	
		$263 28

Pedagogy:		
J. G. Hume	$19 58	
F. W. Merchant	35 83	
F. Tracy	19 58	
		$74 99
Matriculation:		
H. J. Bolitho (presiding)	$34 00	
W. S. Milner (presiding)	34 00	
R. Martin (attendant)	3 00	
J. M. McClure (attendant)	12 00	
W. Tilley (attendant)	10 50	
		$93 50
Household Science:		
J. A. Amyot	$12 00	
Miss C. C. Benson	13 00	
J. H. Faull	3 25	
A. G. Huntsman	3 25	
Miss L. Laird	36 50	
A. B. Macallum	5 50	
		$73 50
Physical Drill:		
R. E. Hooper	$5 25	
A. Williams	5 25	
		$10 50
		$10,354 73
(b) Stationery and Supplies:		
University Press	$446 50	
Hutchison & Coy., parchments,	329 86	
R. M. Williams, diplomas	100 11	
Brown Bros., binders	18 00	
Grand & Toy, binders	8 00	
Gourlay, Winter & Leeming, rent of pianos	12 00	
Fletcher Mfg. Coy., ink fillers	10 50	
R. Dinnis & Son, tables	105 00	
C. M. Richardson, cartage	50 00	
		$1,079 97
(c) Printing Examination Papers and Class Lists:		
University Press	$1,629 75	
		1,629 75
		$13,064 45
Less Government share for Departments of Chemistry and Physics...		325 00
		$12,739 45

12. Library.

(a) Maintenance of Building:		
Elias Rogers Coy., fuel	$527 06	
City Treasurer, water	24 47	
Mrs. Long, cleaning	175 00	
R. Robertson, repairing brickwork	83 28	
Wheeler & Bain, repairing roof	4 98	
W. J. McGuire & Coy., repairing plumbing, etc.	61 01	
Johnson Temperature Regulating Coy., repairing thermostats, etc	15 81	
J. McCausland & Son, painting	129 00	
Ontario Rubber Coy., chair tips	2 25	
Rice Lewis & Son, chair tips	5 32	
G. Menzies, putting tips on chairs	8 75	
L. Rawlinson, repairing chairs	3 00	
Toronto Electric Light Coy., lamp, shades, etc.	3 70	
R. Dinnis & Son, cases	15 00	
Wm. Cane, keys	5 00	
E. B. Eddy Coy., toilet paper	6 00	

India Alkali Works, cleaning material	8 35	
J. Langmuir & Coy., floor oil	2 05	
Mrs. Fussell, washing towels	11 70	
		$1,091 73

(b) General Library Appropriation, Books, etc.:

F. A. Brockhaus, books	$2,114 24
Cazenove & Son, books, etc	1,693 55
H. Le Soudier, books, etc	877 55
B. Seeber, books, etc	163 63
R. Friedländer & Sohn, books, etc	28 19
Chas. Scribner's Sons, books, etc	19 09
P. G. Roy books, etc	26 00
Students' Book Department, books, etc	530 89
H. H. Langton, books	14 50
Prof. G. M. Wrong, books	3 00
Congdon & Britnell, books, etc	14 50
A. Britnell, books, etc	8 25
H. S. Bardal, books, etc	2 00
H. W. Wilson Co., books	4 00
Houghton, Mifflin & Coy., books, etc.	3 00
A. S. Clark, books	4 73
Fratelli Alinari, books, etc	1 56
C. J. Townsend & Coy., books	1 70
Canada Law Book Coy., books	5 00
Canada Law Review, books	5 00
D. R. Jack, books	3 00
Boston Book Coy., books	14 75
C. S. Fisher, books	2 00
A. T. De Lury, books	3 75
D. T. McAinsh & Coy., books, etc	60 00
Chas. Evans, books, etc	15 15
N. E. Dionne, books	6 00
Vicomte de Fronsac, books	1 00
U. S. Geological Survey, pamphlets	36 35
Superintendent of Documents, Washington, documents	21 00
F. K. Kavanaugh, books	1 00
Annual Review Publishing Coy., periodicals	3 00
G. N. Morang & Coy., periodicals and books	20 50
W. H. Guild & Coy., periodicals	188 00
National Geographical Society, periodicals	2 00
Penton Publishing Coy., periodicals	1 65
Publishers' Weekly, periodicals	1 00
American Adademy of Arts and Sciences, periodicals	4 78
Biographical Publishing Coy., periodicals	7 50
Scientific American, periodicals	96 25
Insurance Institute, periodicals	15 00
University of Chicago Press, periodicals, etc	20 08
Wm. Briggs, books	1 50
Tabard Inn Library, books	1 49
Gauthier-Villars, periodicals, etc	56 18
Ontario Library Association, subscription	2 00
Physiological Society, subscription	7 77
Champlain Society, subscription	10 00
Ontario Publishing Coy., periodicals	2 50
Union Library Association, subscriptions	1 99
Might Directories, directory	6 00
Brown Bros., binding	741 45
Bryant Press, binding	70
Robinson & Heath, freight	186 55
Copeland Chatterson Coy., blank books	21 00
Grand & Toy, cards	17 00
Roberts & Son, tablet and lettering	2 50
Library Bureau, label holders, etc	39 50
Hammond Typewriter Coy., typewriter and supplies...	59 65
G. & J. Murray, scissors, etc	1 15
The Librarian, petty disbursements	100 00

The Librarian, re Univ. Studies	$300 00	
University Press, stationery and printing	160 40	
	$7,763 47	
Less chargeable to Library Insurance Fund	3,000 00	
		$4,763 47
(c) Clerical Assistance:		
Miss G. Buchan, assistance	$127 50	
Miss F. E. Brown, assistance	121 23	
Miss E. Creighton, assistance	107 50	
Miss F. M. Wicher, assistance	7 50	
Miss M. E. Foote, typewriting	100 00	
		$463 73
		$6,318 93

13. Grounds.

R. Robertson, new roadway, culverts, grading, etc	$1,261 75	
John McDonald, gravel	480 00	
W. Booth Lumber Coy., lumber	244 97	
R. Dinnis & Son, lumber	9 85	
C. D. McDonald, pruning trees, etc	277 00	
W. Rennie, trees	18 00	
J. McArthur, trees and mould	14 00	
J. Cotterill, flowers	163 96	
Steele, Briggs Seed Coy., grass seed, etc	13 10	
McKerrighan Floral Coy., fertiliser	37 50	
E. Grainger & Coy., fertiliser	40 00	
City of Toronto, use of roller	44 10	
Canada Foundry Coy., repairing roller	14 45	
George Pearsall, sharpening tools, etc	13 95	
Aikenhead Hardware Coy., shovels	9 60	
G. B. Meadows Coy., tree guards	25 00	
Carbon Light & Power Coy., rent of lamp	31 00	
Wm. Cane, padlocks	80	
R. H. Moore, repairing fence	7 00	
D. Pike Coy., repairing flag pole	10 00	
C. M. Richardson, cartage	35 40	
A. Thomson, harness and collar	5 00	
J. Christie, policeman's cap	5 00	
Wreyford & Coy., policeman's helmet	2 01	
M. McBain, policeman's uniforms	36 75	
Geo. Lugsdin & Coy., policeman's belt, etc	3 00	
City Police Department, policeman's cape	2 30	
James Stephen, handcuffs	4 75	
Chief of Police, services of constables	12 00	
The Bursar, fortnightly pay lists, laborers and policeman	2,005 90	
University Press, signs	4 94	
R. B. Thomson, services labelling trees, etc	270 00	
J. S. Pray, expert's services re landscape improvement	98 95	
A. H. Abbott, photos of grounds	24 27	
New Granolithic Walks, portion charged to this year's account of $1 000. brought forward last year	500 00	
	$5,726 30	
Less share of division fence paid by Mrs. Shoenberger	17 50	
		$5,708 80

14. Main Building.

Bennett & Wright, Watchman's recorder, balance brought from last year	$200 00	
Eco Magneto Clock Coy., dials for recorder	4 24	
Ventilating Dining Hall:		
W. J. McGuire & Coy., fan	$350 00	
G. B. Meadows, grille work	40 00	

James McIntosh, painting	$42 77	
Dinnis & Son, lumber	35 00	
J. Wicksey, carpentering	37 60	
Aikenhead Hardware, hardware	21 97	
	$527 34	
R. Robertson, repairing brickwork	511 27	
G. Duthie & Son, repairing roof	603 72	
W. J. McGuire & Coy., repairing plumbing, etc	591 05	
John Vokes, repairing blackboards	200 00	
Toronto Electric Light Coy., repairing motor, etc	23 53	
Polson Iron Works, repairing engine	22 66	
G. B. Meadows Coy., grille work in Janitor's office	56 00	
Canadian General Electric Coy., batteries, etc	69 88	
Central Electric Supply Coy., electric supplies	27 92	
Rice Lewis & Son, hardware	13 67	
Aikenhead Hardware, hardware	31 36	
Vokes Hardware Mfg. Coy., hardware	4 93	
James Morrison Coy., engine room supplies	11 74	
G. W. Grant Coy., engine room supplies, etc	61 94	
Fletcher Mfg. Coy., trays, lanterns, etc	16 50	
Steinberger, Hendry Coy., blackboards, etc	15 66	
T. Eaton Coy., chairs	39 00	
R. Simpson Coy., brooms, shades, etc	60 51	
G. Cowling, polishing marble	5 00	
G. Booth & Son, signs	23 25	
Grand & Toy, office supplies	18 25	
University Press, printing, etc	37 29	
R. Dinnis & Son, lumber	202 78	
G. Menzies, carpentry	31 15	
Wm. Cane, keys	5 00	
Ontario Rubber Coy., hose, etc	76 28	
Dominion Stained Glass Coy., repairing leaded windows	19 15	
A. B. Ormsby, repairing metal shutter	7 00	
C. H. Keane, repairing messenger's wheel	3 00	
Canada Cycle & Motor Coy., repairing messenger's wheel	6 55	
W. K. Simpson, lubricators	6 00	
Wheeler & Bain, smoke pipe, etc	8 63	
C. M. Richardson, moving chairs	8 50	
Giant Mfg. Coy., oil, etc	30 60	
Stewart & Wood, paint, glass, oil, etc	25 83	
India Alkali Works, cleaning material	16 63	
Mrs. Laballister, washing towels	79 20	
J. Rossall, fireman's services	16 50	
Elias Rogers Coy., fuel	3,891 33	
City Treasurer, water	249 48	
Toronto Electric Light Coy., electric current	,1,153 49	
Consumers' Gas Coy., gas	91 04	
		$9,104 85
Government share for Department of Physics		2,000 00
		$7,104 85
Less scrap iron sold		2 00
		$7,102 85

15. Biological Department.

(a) Maintenance of Structure:

Elias Rogers Coy., fuel	$1,004 46
Consumers' Gas Coy., gas	106 56
Toronto Electric Light Coy., electric current	132 49
City Treasurer, water	97 93

Furnishings and Cleaning Materials:

Fletcher Mfg. Coy., house furnishings	41 50
Ironsides Gas Mantle Coy., lamps	5 25
John Catto & Son, towels, etc	24 22

John Kay, Son & Coy., shades, rug	$77 61	
Aikenhead Hardware, hardware	40 64	
Chamberlin Weather Strip Coy., weather strips	10 00	
Dominion Paper Box Coy., book shields	13 40	
C. W. Ketcheson, batteries	6 80	
G. & J. Murray, mantles	1 30	
S. Pearcy & Coy., brush, etc	2 05	
Evans & Sons, cleaning materials	23 31	
Goold, Shapley & Muir Coy., wax	7 00	
Imperial Chemical Coy., soap	10 90	
University Press, stationery, etc	27 32	
Professor Wright, petty disbursements	24 35	
Repairs:		
Toronto Electric Light Coy., repairing switchboard, wiring, etc	471 14	
R. Dinnis & Son, lumber	255 69	
J. C. Scott Coy., lumber	74 38	
J. Wicksey, carpentering	29 60	
G. Menzies, carpentering	58 10	
Bennett & Wright Coy., repairing plumbing	75 24	
Douglas Bros., repairing skylight	12 30	
R. Robertson, repairing brick work	28 73	
Otis Fensom Coy., repairing hoist	21 30	
John Bryce & Son, plastering	8 00	
G. Bullock, painting	72 00	
Aikenhead Hardware, hardware	4 90	
Elliott & Son, glazing	15 95	
Can. Office & School Furniture Coy., chair seats	12 00	
Le Page Door Check Coy., door check	7 00	
Stewart & Wood, paint, etc	9 95	
R. Rennie & Son, repairing roof	38 73	
Professor Wright, petty disbursements	1 10	
Cleaning, etc.:		
Mrs. Clark, charwoman	120 00	
Mrs. Parry charwoman	19 37	
L. Clark, boy cleaner	3 00	
Professor Wright, to pay sundry cleaners	179 45	
		$3,175 02
(b) Biological Department:		
Laboratory Supplies:		
Chandler, Ingram & Bell, laboratory supplies	$63 23	
Elliott & Coy., chemicals	90	
Miss R. A. E. Jackson, diagrams	89 80	
Friedländer & Sohn, books, etc.	10 99	
Students' Book Department, books	36 94	
Art Metropole, drawing materials	9 07	
Brown Bros., cartridge paper	9 00	
Galbraith Photo Coy., lantern slides	6 65	
H. F. Sharpe & Coy., photo materials	1 65	
J. G. Ramsey & Coy., photo materials	42 22	
J. B. Colt Coy., lantern supplies	4 41	
A. J. Reading, lantern slides	18 11	
Freyseng Cork Coy., corks	4 80	
Ontario Rubber Coy., tubing	3 75	
H. A. Dreer, seeds	30	
T. S. Plaskett, repairing microscopes	5 60	
Inland Revenue Department, methylated spirits	51 06	
Journal of Experimental Zoology, subscription	5 00	
University Press, stationery and printing	7 16	
Robinson & Heath, freight	33 46	
Professor Wright, petty disbursements	40 35	
Museum Specimens:		
Dr. August Müller, specimens	261 94	
Robinson & Heath, freight	7 66	

Museum Cases and Supplies:	
Charles Rogers & Sons Coy., cases, etc	419 90
James Iredale, label holders, etc	28 25
G. B. Meadows Coy., cases	750 00
Elliott & Son, glass for cases	53 50
Toronto Plate Glass Coy., glass	1 26
P. Wytsman, museum supplies	69 95
Dominion Paper Box Coy., trays	14 25
Aikenhead Hardware, hardware	8 56
Robinson & Heath, freight	12 89
Students' Book Department, books	16 15
University Press, stationery and printing	10 49
Professor Wright, petty disbursements	14 94
Marine and Lake Laboratories:	
B. A. Bensley, expenses	101 93
J. R. G. Murray, expenses	50 00
A. J. McIntosh, expenses	50 00
A. B. Macallum, expenses	50 00
I. R. Bell, expenses	50 00
Students' Laboratory Supplies:	
Klönne & Müller, glassware	282 17
Bausch & Lomb Coy., glassware	281 01
Dr. W. H. Piersol, series of sections	100 00
J. Stevens & Son, section lifters	31 25
R. Jung, apparatus	62 55
James Iredale, tin vessels, etc	68 00
Marine Biological Laboratory, specimens	12 50
Evans & Sons, chemicals	101 81
Chandler, Ingram & Bell, laboratory supplies	39 23
Parke, Davis & Coy., supplies	2 50
Wm. Croft & Sons, needles, etc	2 93
Inland Revenue Department, methylated spirits	42 19
Jas. A. Williams, frogs	6 85
Jas. J. Dickson, frogs	16 50
G. Hope & Son, rabbits	4 95
J. A. Simmers, bulbs	23 70
J. A. Carveth & Coy., boxes	57 50
Aikenhead Hardware, hardware	30 00
James Morrison Coy., brass	8 75
John Catto & Son, sateen	67 09
Students' Book Department, books	67 89
Robinson & Heath, freight	20 82
University Press, printing and stationery	168 78
Professor Wright, petty disbursements	9 45
Catalogue Preparation:	
J. B. Williams, 5 months' work	158 00
New Miscroscopes, etc.:	
E. Leitz, microscopes	350 00
Carl Zeiss, microscopes	250 00
Bausch & Lomb Coy., apparatus	43 30
Robinson & Heath, freight	1 45
Sub-Department of Botany:	
Apparatus:	
Eug. Albrecht, apparatus	202 08
Bausch & Lomb apparatus	97 84
H. J. Green, apparatus	25 75
Eberbach & Son, apparatus	57 88
C. H. Stoelting Coy., apparatus	30 60
Chandler, Ingram & Bell, apparatus	23 20
Draper Mfg. Coy., thermometers	54 25
D. Pike Coy., covers	6 00
James Iredale, tank	3 50
Williams, Browne & Earl, slides	

Ontario Rubber Coy., tubing	$1 50	
Robinson & Heath, freight	6 31	
C. W. Irwin, freight	18 02	
Professor Wright, petty disbursements	6 85	
Herbarium:		
E. Bartholomew, fungi	125 25	
J. Lomax, plants	23 07	
A. B. Seymour, material	42 65	
W. J. Gerhard, material	30 25	
E. W. D. Holway, material	16 00	
F. S. Collins, material	10 00	
P. Sydow, specimens	127 75	
Miss J. E. Tilden, fungi	51 25	
Cambridge Botanical Supply Coy., supplies	12 73	
R. Dinnis & Son, cases	50 00	
L. Rawlinson, cases	51 00	
J. Wicksey, staining cases	9 50	
Grand & Toy, cards, etc	13 65	
Miss M. E. Head, services	98 50	
C. W. Irwin, freight	50	
University Press, printing, etc	80 36	
Professor Wright, disbursements	9 90	
Museum Cases:		
Canada Cabinet Coy., cases	785 00	
A. J. Dinsmore, finishings for cases	99 00	
Museum Supplies:		
R. B. Thomson, material	150 00	
Eimer & Amend, jars	102 75	
R. B. Hough, woods	50 25	
Bausch & Lomb Coy., jars	7 50	
A. J. Dinsmore, tree sections	5 60	
Robinson & Heath, freight	7 45	
		$7,234 03

16. Physiological Department.

Maintenance and Laboratory Supplies:		
Vereinigte Fabriken, apparatus	$472 91	
Carveth & Coy., microscopes	300 00	
F. Köhler, apparatus	81 29	
Harvard Apparatus Coy., apparatus	71 17	
Dr. R. Muencke, apparatus	39 05	
Carl Zeiss, pipettes	13 30	
Bausch & Lomb Coy., sterilizer, etc.	15 49	
Eimer & Amend, laboratory supplies	209 33	
Lyman Bros. & Coy., chemicals, etc.	26 42	
Chandler, Ingram & Bell, laboratory supplies	27 70	
Fletcher Mfg. Coy., vessels	17 40	
Ontario Rubber Coy., tubing	27 35	
Freyseng Cork Coy., corks	2 20	
Canadian General Electric Coy., batteries	16 16	
J. A. Fontaine, frogs	100 00	
A. J. Reading, photographs	33 10	
H. F. Sharpe & Coy., photo materials	1 80	
Art Metropole, drawing materials	20 11	
Gustav Fock, dissertations	136 66	
Archivio di Fisiologia, subscription	4 96	
Journal of Biological Chemistry, subscription	3 00	
Miss C. C. Benson, pamphlets	3 80	
Students' Book Department, books	30 25	
Léon Frédericq, books	4 10	
Steinberger, Hendry Coy., blackboards	14 70	
Office Specialty Coy., stools	13 00	
John Kay, Son & Coy., chair	9 50	

Grand & Toy, stationery	$4 20	
Brown Bros., office supplies	11 00	
W. J. Gage & Coy., blank books	20 14	
University Press, printing, etc.	100 51	
Jas. McIntosh, sign	2 00	
Lake Simcoe Ice Coy., ice	3 55	
G. & J. Murray, lights	8 10	
Mackenzie & Coy., framing	25 95	
Robinson & Heath, freight	67 30	
C. W. Irwin, freight	9 73	
John Abel, expressage, etc.	14 00	
Maintenance, Medical Building:		
Medical Faculty, share due by Physiology	2,500 00	
		$4,461 23
Less paid by Prof. Macallum from Students' account		52 01
		$4,409 22

17. Psychological Department.

Spindler & Hoyer, philosophical apparatus	$44 96	
Aug. Natterer, philosophical apparatus	12 58	
W. H. Fox, philosophical apparatus and repairs	30 25	
Central Electric Coy., philosophical apparatus, etc.	20 72	
Wanless & Coy., stop watch	6 00	
Art Metropole, drawing materials	21 86	
Prang Educational Coy., colors	9 95	
Canadian General Electric Coy., lamps, motor, etc.	88 53	
Lockhart Photo Supply Coy., photo supplies	6 00	
E. A. Corker, lathe, etc.	5 40	
H. Nichols, book	3 50	
W. Engelmann, books	17 89	
Students' Book Department, books	4 80	
Grand & Toy, stationery, etc.	25 10	
Buntin, Reid Coy., cardboard	9 38	
University Press, printing, stationery, etc.	6 23	
J. J. Follett, cloth	3 50	
W. Dawson, cloth	1 75	
W. A. Murray & Coy., cloth	3 35	
Canada Carbon Coy., typewriter supplies	6 55	
Rice Lewis & Son, scissors, etc.	3 15	
Citizens' Gas Control Coy., gas governor	3 75	
Toronto Auer Light Coy., mantles	1 40	
C. W. Irwin, freight	15 96	
Office Specialty Mfg. Coy., cabinet, etc.	16 80	
Dr. A. H. Abbott, petty disbursements	7 57	
W. G. Smith, petty disbursements	30 00	
		$406 93

18. Mathematics.

M. A. Mackenzie, arithmometer	$197 15	
Ph. Pellin, apparatus	138 54	
T. Eaton Coy., sidereal watch	32 10	
F. L. Blake, sextant	25 00	
Carl Zeiss, binocular	32 95	
University of Chicago Press, slides	29 21	
Lockhart Photo Supply Coy., photo supplies	5 20	
Students' Book Department, actuarial books	110 40	
Nautical Almanac Office, book	2 00	
University Press, printing, etc.	8 38	
Grand & Toy, stationery	3 30	
C. W. Irwin, freight	8 42	
		$592 65

19. Political Science.

University Press, stationery, etc.	$16 11	
		$16 11

20. History.

B. Seeber, photographs	$28 50	
Petersen Estate, mounting views	6 90	
Steinberger, Hendry Coy., map	4 50	
Copp, Clark Coy., map	4 00	
University Press, stationery, etc.	5 78	
		$49 68

21. Italian and Spanish.

A. J. Reading, lantern slides	$36 25	
		$36 25

22. Advertising (University).

Alumni Association, annual grant	$200 00	
Alumni Association, advertising in University Monthly...	100 00	
Trinity Year Book, advertisement	25 00	
Westminster, advertisement	20 00	
"Torontonensis," advertisement	15 00	
"Varsity," advertisement	15 00	
Copp, Clark Coy., advertisement in Canadian Almanac ...	15 00	
Toronto Mail and Empire, advertisement	11 25	
Toronto World, advertisement	11 25	
The Standard, advertisement	10 00	
The Nation, N.Y., advertisement	6 30	
The Athenaeum, advertisement	5 94	
Toronto Globe, advertisement	1 53	
		$436 27

23. Incidentals.

R. M. Williams, engrossing resolutions and addresses	$79 50	
Lady Jane Van Koughnet, forwarding articles comprising Capt. Van Koughnet's legacy	60 63	
P. W. Ellis & Coy., engraving medals	5 84	
University Press, sundry printing	12 89	
Toronto Weekly Railway Guide, subscription	5 20	
McKerrighan Floral Coy., wreath for funeral	15 00	
J. S. Simmons, wreaths	19 00	
Wilson & Cousins, fire extinguishers	28 00	
Diamond Dry Powder Coy., fire extinguishers	25 00	
Chief of Fire Brigade, attendance of firemen at functions	36 00	
		$287 06

24. University College Departments.

Classics.

(a) Greek:

A. J. Reading, lantern slides	$31 65	
W. C. Jaques, operating lantern	5 00	
Steinberger, Hendry Coy., blackboard	10 41	
		$47 06

(b) Latin:

A. J. Reading, lantern slides	$32 40	
Miss F. B. Arnoldi, lantern slides	6 00	
Steinberger, Hendry Coy., map	18 50	
University Press, stationery	84	
		57 74
		$104 80

English:

Miss A. R. Riddell, reading essays	$75 00	
Mrs. M. P. Wallace, reading essays	75 00	
		$150 00

French:		
A. F. B. Clark, reading essays	$100 00	
A. J. Reading, lantern slides	40 80	
A. H. Abbott, lantern slides	7 00	
W. C. Jaques, operating lantern	6 00	
Miss F. B. Arnoldi, binding	1 10	
Students' Book Department, books	3 40	
		$158 30
German:		
A. J. Reading, lantern slides	$41 70	
Students' Book Department, books	16 50	
University Press, stationery	3 68	
		$61 88
Oriental Literature:		
Prof. McCurdy, books	$59 95	
		$59 95
Stationery, etc.:		
University Press	$5 38	
The Bursar, postage supplied to Registrar	50 00	
		$55 38
Printing:		
University Press	$82 06	
		$82 06
Advertising:		
"Torontonensis," advertisement	$15 00	
Toronto Evening Telegram, advertisement	2 64	
Toronto News Publishing Coy., advertisement	1 76	
Toronto Star, advertisement	1 00	
		$20 40
Incidentals:		
Mrs. M. White, physical instruction to women students	$200 00	
Ewing & Murphy, dumb bells, etc.	10 20	
R. M. Williams, engrossing	21 90	
Dr. G. W. Johnston, travelling expenses, representing University College	15 50	
Principal M. Hutton, travelling expenses	12 50	
McKerrighan Floral Coy., wreath	7 00	
Gourlay, Winter & Leeming, rent of pianos	47 50	
Keller & Coy., lantern	37 15	
C. W. Irwin, freight on lantern	1 45	
		$352 30

25. Gymnasium and Students' Union.

Elias Rogers Coy., fuel		$545 91	
City Treasurer, water		141 97	
Consumers' Gas Coy., gas	$113 36		
Less paid by Students' Societies	55 85		
		57 51	
Mrs. Catherine Wood, cleaning		54 38	
W. J. McGuire & Coy., repairs to boiler, etc.		64 50	
R. Robertson, repairing brickwork		3 61	
LePage Door Check Coy., repairing spring		2 00	
Aikenhead Hardware Coy., hardware		2 75	
Ontario Rubber Coy., hose		12 50	
University Press, toilet paper		9 08	
H. A. Wilson Coy., apparatus		70 05	
Wm. Cane, repairing tools, running track, etc		51 25	
G. H. Corsan, instruction in swimming		90 00	
Athletic Association, services of boy		170 00	
D. Henry, assisting caretaker		4 00	
			$1,279 51

26. Dining Hall.

University Dining Hall Committee, grant towards maintenance	$500 00

27. Educational Association Reception.

University Dining Hall, refreshments	$180 00	
W. C. Jaques, operating lantern	4 50	
H. Ruthven, cloak room service	7 00	
F. Hanmer, labor and attendance	10 00	
J. C. McMurray, labor and attendance	17 50	
C. M. Richardson, cartage	30 00	
		$249 00

28. Summer Session (1905),

Remuneration to Lecturers:

A. C. Casselman, Art	$150 00	
W. H. Piersol, Biology, $150; expenses $4.73	154 73	
J. H. Faull, Botany	150 00	
F. B. Allan, Chemistry, $150; expenses $7	157 00	
F. B. Kenrick, Chemistry	100 00	
W. A. Parks, Mineralogy and Geology, $150; expenses $3	153 00	
A. H. Abbott, Psychology	150 00	
W. G. Smith, Psychology	50 00	
J. C. McLennan, Physics, $150; expenses, $30	180 00	
H. F. Dawes, Physics	85 00	
J. R. McLean, Reading	150 00	
A. H. Abbott, postage and secretarial work	77 33	
University Press, printing and stationery	40 72	
		$1,597 78
Less fees received		235 00
		$1,362 78

29. University Commission.

H. J. Bolitho, secretarial services	$40 00	
Geo. Hilliar, attendance	2 00	
The Weekly Sun, advertisement	4 00	
The Shepnard Publishing Coy., advertisement	6 40	
Toronto Daily Star, advertisement	22 50	
The News Publishing Coy., advertisement	9 25	
Toronto Evening Telegram, advertisement	16 50	
The Toronto World, advertisement	17 00	
Toronto Globe, advertisement	27 00	
Toronto Mail and Empire, advertisement	43 05	
The Bryant Press, printing	12 00	
University Press, printing	19 16	
Marshall & Parke, cartage	4 25	
		$223 11

30. University Studies.

H. H. Langton, salary as Editor	$200 00	
H. H. Langton, royalties on sales	43 86	
G. M. Wrong, royalties on sales	43 86	
S. B. Leacock, contributor	7 00	
C. R. Beazley, "	20 00	
H. P. Biggar, "	4 00	
A. Shortt, "	4 00	
W. B. Munro, "	5 00	
A. C. Casselman, "	2 00	
J. H. Coyne, "	8 00	
Major Wm. Wood, "	2 00	
A. G. Doughty, "	13 00	
Lt. Col. E. Cruickshank, contributor	15 00	
C. C. James, contributor	11 00	
Prof. C. W. Colby, "	2 00	
G. W. Hay, "	6 00	
J. S. Carstairs, "	4 00	
L. Gerin, "	6 00	
E. B. Brown, "	8 00	

J. S. Will, contributor	$4 00	
W. S. Wallace, "	3 00	
A. P. Coleman, "	4 00	
A. F. Chamberlain, "	10 00	
James Bain, "	9 00	
Miss H. Denison, typewriting	8 90	
Miss M. Gillespie, index to Vol. X	3 00	
Toronto Engraving Coy., engraving, etc.	56 89	
Bryant Press, printing and binding	747 50	
Murray Printing Coy., printing	47 00	
University Press, printing	8 42	
Brown Bros., binding	69 55	
		$1,375 98
Less chargeable to University Studies, Trust Funds account		375 98
		$1,000 00

31. Memorial Volume.

J. H. Stewart, copying	$10 60	
Miss E. F. Denison, copying	6 15	
Lyonde, photos	10 00	
A. A. Inglis, photos	6 68	
		$33 43

32. Lectures on Public Speaking.

J. R. McLean, Lecturer	750 00

33. Trinity College.

Canada Cycle & Motor Coy., automobile service	$88 30	
Trinity College, students' car fares	255 70	
		$344 00

34. Art Reproductions.

Braun, Clement & Coy., reproductions	$568 05	
D. Anderson, reproductions	174 74	
Berlin Photographic Coy., reproductions	60 25	
Fratelli Alinari, reproductions	33 88	
F. Hanfstaengel, reproductions	25 75	
University Press stationery, etc.	7 43	
Robinson & Heath, freight	123 20	
		$993 30

35. Gratuity.

To widow of late Dr. R. G. Murison	$1,500 00

36. Unforeseen and Unprovided Items.

C. T. Currelly, salary as Collector of Archaeological remains (6 mos.)	$250 00		
C. T. Currelly, for purchase of Archaeological specimens	488 89		
		$738 89	
North-West Expedition, re Esquimaux Ethnological Collection		300 00	
American Museum of Natural History, re Philippine Ethnological Collection	$400 50		
Robinson & Heath, freight on same	14 98		
		$415 48	
William Houston, special Lectures in Canadian Constitutional History		$200 00	
Prof. Edgar Frisby, expert's services re Department of Astronomy		75 00	
H. Montgomery, travelling expenses to inspect U. S. Museums		115 83	
Prof. W. J. Loudon, towards experiments in Atmospheric Electricity		100 00	
F. A. Mouré, honorarium for extra services		300 00	
W. C. Jaques, assistance in Teachers' Course		50 00	
			$2,295 20

APPENDIX V.

MEDICAL FACULTY.

RECEIPTS.

Fees:			
First year	$13,826 00		
Less Arts portion	1,708 00		
		$12,118 00	
Second year	$14,589 00		
Less Arts portion	1,950 00		
		12,639 00	
Third year		14,405 00	
Fourth year		12,176 00	
Fifth year		225 00	
Miscellaneous		901 00	
Registration		850 00	
Examination		1,980 00	
Psychology		420 00	
Interest on Bank account		595 92	
New Medical Building, share of maintenance from Physiological Department		2,500 00	
New Medical Building, rent of rooms to Provincial Board of Health		500 00	
			$59,309 92
Balance 1st July, 1905			822 39
			$60,132 31

EXPENDITURE.

Summary.

Salaries			38,014 67
Maintenance:			
Anatomical Department		$4,891 42	
Departments other than Anatomy		6,610 49	
Medical Building		6,471 53	
General expenses		3,764 77	
			21,738 21
Balance 30th June, 1906			379 43
			$60,132 31

DETAILS.

Salaries.

Professors:		
A. Primrose, Anatomy	$2,000 00	
J. J. Mackenzie, Pathology, etc.	2,600 00	
I. H. Cameron, Surgery and Clinical Surgery	862 05	
F. LeM. Grasett, Surgery and Clinical Surgery	832 05	
G. A. Peters, Surgery and Clinical Surgery	862 05	
L. Teskey, Surgery and Clinical Surgery	832 05	
A. McPhedran, Medicine and Clinical Medicine	862 05	
J. L. Davidson, Clinical Medicine	832 05	
C. Sheard, Preventive Medicine	832 05	
J. Algernon Temple, Operative Obstetrics, etc.	832 05	
A. H. Wright, Obstetrics	862 05	
W. Oldright, Hygiene	862 05	
J. F. W. Ross, Gynaecology	574 70	
J. M. McCallum, Pharmacology, etc.	574 70	
N. A. Powell, Medical Jurisprudence	554 70	
R. A. Reeve, Ophthalmology, etc.	344 82	
G. R. McDonagh, Laryngology, etc.	344 82	
W. H. Ellis, Toxicology	287 35	
G. S. Ryerson, Ophthalmology, etc.	221 88	
G. H. Burnham, Ophthalmology, etc.	229 72	
		$16,203 19

Associate Professors:

H. A. Bruce, Clinical Surgery	$459 76	
D. J. G. Wishart, Laryngology, etc.	266 28	
G. A. Bingham, Clinical Anatomy and Clinical Surgery	554 70	
W. P. Caven, Clinical Medicine	574 70	
H. W. Aikins, Anatomy	574 70	
A. M. Baines, Clinical Medicine	554 70	
J. T. Fotheringham, Clinical Medicine	554 70	
H. B. Anderson, Clinical Medicine	554 70	
C. Trow, Ophthalmology, etc.	332 82	
F. N. G. Starr, Clinical Surgery	459 76	
J. A. Amyot, Pathology	459 76	
W. B. Thistle, Clinical Medicine	459 76	
C. L. Starr, Orthopaedics	344 82	
R. D. Rudolf, Medicine, etc.	344 82	
A. R. Gordon, Medicine, etc.	344 82	
R. J. Dwyer, Medicine, etc.	344 82	
H. T. Machell, Obstetrics, etc.	321 86	
W. T. Stuart, Medical Chemistry	500 00	
		$8,007 48

Demonstrators and Associates:

G. Boyd, Clinical Medicine	$240 00	
G. Chambers, Clinical Medicine	240 00	
F. Fenton, Clinical Medicine	144 00	
H. C. Parsons, Clinical Medicine	144 00	
W. Goldie, Clinical Medicine	144 00	
W. McKeown, Clinical Surgery	240 00	
C. A. Temple, Clinical Surgery	240 00	
A. H. Garratt, Clinical Surgery	240 00	
C. B. Shuttleworth, Clinical Surgery	144 00	
T. B. Richardson, Clinical Surgery	144 00	
J. F. Uren, Clinical Surgery	144 00	
K. C. McIlwraith, Obstetrics	240 00	
F. Fenton, Obstetrics	144 00	
C. B. Shuttleworth, Anatomy	450 00	
W. J. McCollum, Anatomy	150 00	
C. J. Copp, Anatomy	50 00	
G. Elliott Anatomy	150 00	
E. R. Hooper, Anatomy	150 00	
G. E. Smith, Anatomy	50 00	
A. C. Hendrick, Anatomy	150 00	
A. J. Mackenzie, Anatomy	150 00	
D. McGillivray, Anatomy	150 00	
E. S. Ryerson, Anatomy	150 00	
F. W. Marlow, Anatomy	150 00	
W. A. Scott, Anatomy	100 00	
T. D. Archibald, Pathology, etc.	250 00	
G. Silverthorn, Pathology, etc.	150 00	
C. J. Wagner, Pathology, etc.	150 00	
M. M. Crawford, Pathology, etc.	150 00	
F. A. Clarkson, Pathology, etc.	150 00	
W. H. Pepler, Pathology, etc.	150 00	
H. C. Parsons, Pathology, etc.	150 00	
H. S. Hutchison, Clinical Laboratory	125 00	
M. H. V. Cameron, Clinical Laboratory	50 00	
R. H. Bonnycastle, Clinical Laboratory	25 00	
F. J. Buller, Clinical Laboratory	25 00	
E. S. Ryerson, Pathology	150 00	
G. W. Howland, Pathology	50 00	
C. P. Lusk, Pharmacy, etc.	250 00	
V. E. Henderson, Pharmacology	500 00	
D. McGillivray, Medicine	100 00	
G. W. Howland, Medicine	100 00	
T. D. Archibald, Medicine	100 00	
		$6,923 00

General Service:		
A. Primrose, Secretary to Faculty	$1,200 00	
J. J. Mackenzie, Assistant Secretary	100 00	
Thos. Motton, Caretaker	720 00	
J. S. Pollock, Chief Engineer	800 00	
A. F. McKay, Assistant Engineer (3 mos.)	150 00	
T. K. Hagen, Assistant Engineer (3 mos.)	150 00	
Alex. Wilson, Janitor	600 00	
George Lynne, attendant, Anatomy Dept.	660 00	
J. Sherman, attendant, Anatomy Dept.	450 00	
V. Cranner, Laboratory boy, Anatomy Dept. (7 mos.)	105 00	
G. Williamson, Laboratory boy (9 mos.)	198 00	
Miss M. Armour, Stenographer	528 00	
Miss M. E. Foote, Library Assistant (9 mos.)	300 00	
		$5,961 00
Miscellaneous:		
Dr. N. H. Beemer, Psychology fees	$420 00	
Dr. J. H. Richardson, Honorarium as retired Professor	250 00	
Dr. Uzziel Ogden, Honorarium as retired Professor...	250 00	
		$920 00
		$38,014 67
Maintenance:		
(a) Anatomical Department:		
D. J. Harris, subjects	$180 00	
J. H. Millard, subjects	100 00	
C. Ranney, subjects	100 00	
J. B. McIntyre subjects	80 00	
J. M. Crawford, subjects	60 00	
J. W. Woods, subjects	60 00	
J. Nott, subjects	60 00	
D. Bellegham, subjects	40 00	
A. Klippert, subjects	40 00	
H. McBride, subjects	35 00	
J. Rogers, subjects	20 00	
N. W. Pearce, subjects	20 00	
J. Brophy, subjects	20 00	
J. Tickett, subjects	15 00	
C. D. Blachford, subjects	15 00	
B. G. Sells, subjects	15 00	
J. G. Frost, subjects	5 00	
H. R. Ranks, subjects and express	68 00	
A. Millard, subjects, fees and expenses	627 70	
Dr. Primrose, expenses re subjects	364 47	
Inland Revenue Dept., methylated spirits	234 32	
W. Lloyd Wood, chemicals	250 33	
Lyman Sons & Co., chemicals	3 90	
W. Staughton, salt	1 50	
McColl Bros. & Co., oil	17 05	
Catto & Son, cotton and towels	16 20	
Mrs. Clark, washing towels	30 88	
Michie & Co., soap, &c	22 40	
Art Metropole, drawing materials	2 43	
J. A. Carveth, anatomical atlas	8 75	
J. T. Wilson, tinware	44 88	
J. F. Hartz & Co., forceps	17 10	
Vokes Hardware Co., saws	4 62	
Chas. Rogers & Sons, stools	31 75	
Adams Furniture Co., chairs	18 00	
Wm. Cane, cupboards, &c	118 75	
Steinberger & Hendry Co., black bd.	22 09	
G. & J. Murray, lamps	3 90	
Queen City Plate Glass Co., glass	2 40	
A. Pride, diagrams	50 00	
Bell Telephone Co., telephone service	65 00	

University of Toronto, annual payment for occupation of part of Biological Building	2,000 00	
		$4,891 42
(b) Departments other than Anatomy:		
Eimer & Amend, chemicals	$317 21	
W. Lloyd Wood, chemicals	91 35	
Chandler, Ingram & Bell, chemicals	4 06	
J. A. Carveth & Co., laboratory supplies	28 90	
Randall Faichney Co., laboratory supplies	5 91	
J. F. Hartz Co., chemicals and test tubes	19 60	
Beaver Flint Glass Co., tubes	2 20	
Bausch & Lomb Co., microscopes	133 25	
Central Electric Co., cylinders and vials	6 10	
Ontario Rubber Co., tubing, etc.	6 30	
Toronto Liquid Carbonate Co., gas	13 00	
Inland Revenue Dept., methylated spirits	98 21	
Spencer Lens Co., objectives	130 28	
J. G. Ramsay & Co., photo materials	17 50	
Art Metropole, drawing materials	1 99	
Lake Simcoe Ice Co., ice	73 50	
C. W. Irwin, freight	14 62	
T. Motton, food for animals, &c	239 03	
C. A. Dunning, food for animals, &c	1 25	
J. Hope & Son, rabbits	3 60	
Parke Davies & Co., serum	7 50	
Scholey Bros., moulding	1 50	
V. A. Russil, crockery	4 80	
G. Pearsall, hardware and paint	28 76	
Rice Lewis & Son, hardware	3 00	
Polson Iron Works, brass gears	1 00	
Beardmore Belting Co., belting	1 60	
Gustave Fock, periodicals	139 20	
University of Toronto, interest on new building account	3,000 00	
University of Toronto, third instalment and int. on equipment account	2,215 27	
		6,610 49
(c) Maintenance New Building:		
Elias Rogers Co., fuel	$2,171 75	
City Treasurer, water	475 58	
Consumers' Gas Co., gas	212 08	
Toronto Electric Light Co., electric current and supplies	448 46	
A. E. Giddens, cleaner	480 00	
W. Fenton, cleaner	483 00	
Wright & Gibson, motor, &c	403 00	
F. J. Moore, cases, tables, &c	436 40	
W. Mashinter & Co., radiators, &c.	345 54	
W. J. Dunlop, plumbing	3 05	
W. J. McGuire & Co., repairing drain, &c	22 36	
Rice Lewis & Son, hardware	113 37	
Aikenhead Hardware, hardware	7 98	
G. B. Meadows Co., window guards	16 00	
Polson Iron Works, castings	3 31	
Galloway Taylor & Co., castings	2 50	
Fletcher Manufacturing Co., hardware	72	
Toronto Plate Glass Co., glass	12 03	
Consolidated Plate Glass Co., glass	9 94	
Scholey Bros., lumber	16 29	
F. Hillock, lumber	10 78	
C. B. Williams, lumber	9 42	
R Dinnis & Son, sawdust, &c	2 43	
United Factories, brushes	31 70	
Canada Oil Co., soap and oil	36 25	
D. Bell, soap	27 20	
G. W. Grant & Co., oil	31 71	

McColl Bros. & Co., oil	$15 75	
Stewart & Wood, paint, &c	275 35	
J. McIntosh, painting	10 00	
G. Pearsall, glass and glue	3 76	
Imperial Plaster Co., plaster	65	
R. Robertson, repairing brickwork, &c	50 41	
E. H. Roberts, keys	14 60	
J. Stevens & Co., needles, &c	1 10	
W. Junor, tumblers	3 50	
Lyman, Knox & Clarkson, bottles	12 25	
W. A. Murray & Co., canvas	6 00	
T. Motton, washing towels, &c	104 33	
Canada Paper Co., toilet paper	10 20	
Canadian General Electric Co., electric supplies	1 71	
Jones & Moore, electric supplies	3 00	
Central Electric Co., electric supplies	37 77	
Chandler, Ingram & Bell, battery, &c	10 80	
Lyman Bros. Co., chemicals	42 75	
Imperial Chemical Co., powder	5 00	
J. Macdonald & Co., scrap	3 00	
Wheeler & Bain, sundries	25	
C. M. Richardson, cartage	33 75	
J. Haynes, cartage	3 00	
J. Hall, cartage	9 75	
		$6,471 53

(d) General Expenses:

Queen's Quarterly, advertising	$ 75 00	
Education Publishing Co., advertising	110 00	
Presbyterian S. S. Publications, advertising	100 00	
Can. Journal Med. and Surg., advertising	80 00	
Westminster Co., advertising	100 00	
Dominion Medical Monthly, advertising	40 00	
Acta Ridleiana, advertising	15 00	
Trinity College School Record, advertising	9 00	
Ontario Educational Association, advertising	20 00	
'Varsity, advertising	35 00	
Acta Victoriana, advertising	50 00	
Torontonensis, advertising	30 00	
Can. Practitioner and Review, advertising	100 00	
Montreal Medical Journal, advertising	60 00	
Ontario Publishing Co., advertising	75 00	
Trinity University Year Book, advertising	25 00	
Lux Columbiana, advertising	38 50	
Upper Canada College Times, advertising	16 00	
University Monthly, advertising	100 00	
University Press, printing calendar, &c	757 38	
Brown Bros., stationery, &c	94 35	
Office Specialty Mfg. Co., cards, &c	11 10	
J. A. Carveth & Co., cards, &c	1 00	
Art Metropole, drawing materials	1 00	
R. J. Hamilton, books	3 75	
Grand & Toy, ink	1 40	
Steinberger, Hendry & Co., crayons	2 65	
United Typewriter Co., supplies	24 60	
C. Gripton, rubber stamps	5 45	
Dr. Primrose, general disbursements, postage, etc for session	611 74	
Ryrie Bros., engraving medals	8 00	
Hutchison & Co., medals	48 41	
J. G. Ramsay & Co., camera	28 30	
A. J. Reading, photos	3 90	
L. Rawlinson, bookcase	90 00	
Eug. Albrecht, supplies	20 15	
W. Lloyd Wood, syringes, &c	37 46	
E. Merck, pharmacology supplies	25 93	
Doane Bros., cab hire	1 50	

Miller Mfg. Co., coats	8 00	
Penman & Sprang, duplicator	14 50	
C. W. Irwin, brokerage	25	
Robinson & Heath, freight	3 19	
J. Wicksey, labor	3 00	
Bell Telephone Co., telephone service	79 26	
W. E. McKinley, assistance in laboratory	150 00	
Dr. D. N. Anderson, Instructor in Anaesthetics	50 00	
Dr. R. A. Reeve, expenses as Dean of Faculty	300 00	
University of Toronto, appropriation for Library	300 00	
		$3,764 77
		$21,738 21

APPENDIX VI.

UNIVERSITY PRESS.

TRANSACTIONS TWELVE MONTHS ENDING 30TH JUNE, 1906.

Income.

Receipts during 1905-6	$6,846 01	
Accounts receivable 30th June, 1906	1,351 51	
		$8,197 52

Expenditure.

Printers' wages	$3,701 50	
Paper and other supplies	4,734 82	
	$8,436 32	
Depreciation of Plant	321 00	
		$8,757 32
		$559 80
Balance 30th June, 1905		970 31
		$410 51
Work in progress 30th June 1906	$261 92	
Supplies on hand 30th June, 1906	401 00	
		$662 92
Operating balance carried to G. E. Fund (Schedule 1)		$1,073 43

Assets 30th June, 1906.

Plant as per return 30th June, 1905	$3,000 00	
Additions to type, etc., 1905-6	210 06	
	$3,210 06	
Ten per cent. for depreciation as above	321 00	
Plant 30th June, 1906	$2,889 06	
Inventory as above	662 92	
		$3,551 98

Details of Expenditure

Fortnightly Pay Lists, wages of printers	$3,701 50
Brown Bros., paper, etc.	1,781 71
West & Gillis, binding, etc.	378 25
Barber & Ellis Coy., paper, envelopes, etc	183 05
Canada Paper Coy., paper	125 36
Howard & Smith Paper Coy., paper etc.	120 61

Lincoln Paper Mills Coy., paper	$37 66	
Buntin, Reid Coy., paper	70 67	
Copp, Clark Coy., paper, etc.	7 80	
W. J. Gage & Coy., paper, etc.	58 56	
Grand & Toy, paper, etc.	29 05	
Knapp Envelope Coy., envelopes, paper, etc.	21 50	
Ritchie & Ramsey, paper, etc.	10 35	
E. B. Eddy Coy., fibre	3 00	
Dominion Paper Box Coy., tubes	15 20	
Miln-Bingham Printing Coy., printing	344 75	
R. G. McLean, composition, etc.	600 90	
Anderson Printing Coy., press work	35 75	
Mail Job Printing Coy., press work	16 50	
Brown, Searle Printing Coy., press work	4 75	
A. Anderson, press work	331 00	
Standard Embossing Coy., embossing	34 55	
Whaley, Royce & Coy., engraving	19 72	
Royle Engraving Coy., engraving	9 80	
Rolph & Clark, lithographing	46 75	
Alexander & Cable Lithographing Coy., lithographing	4 50	
National Electrotype Coy., electros	15 85	
Littlejohn & Vaughan, electros	12 65	
Patterson & Heward, die	4 50	
Grip, Limited, zincs	34 55	
Legg Bros. Engraving Coy., engraving	12 55	
W. A. Blashford, binding, etc.	92 00	
Office Specialty Mfg. Coy., perforating cards	7 43	
Upper Canada Bible Society, press work	60	
Canada Printing Ink Coy., ink, etc.	12 60	
Art Metropole, supplies	10 67	
J. Haddon & Coy., rules	25 58	
British Type Founders' Agency, punches	5 35	
Miller & Richard, pins	3 00	
Rice Lewis & Son, rules, etc.	75	
Jas. Morrison Coy., oil cups	1 58	
McColl Bros. Coy., oil, etc.	4 50	
J. Langmuir & Coy., oil	2 05	
G. & J. Murray, benzine	2 80	
C. W. Mack, rubber stamps, etc.	3 06	
Douglas & Ratcliff, cotton	53 81	
Kilgour Bros., cotton	1 75	
Ault & Wiborg, rollers	4 50	
G. B. Meadows Coy., screen	4 00	
J. Doust, covers	3 00	
A. Welch & Son, stove pipes	3 50	
T. Eaton Coy., shades	5 76	
Aikenhead Hardware Coy., hardware	1 60	
E. Carroll, grinding knives	1 00	
Elias Rogers Coy., fuel	37 33	
Wheeler & Bain, repairing down pipes	7 15	
Breakey's Cartage Agency, cartage	4 40	
J. Haynes, cartage	9 90	
J. Hill, cartage	4 30	
T. W. Langstone, petty expenses	40 28	
Mrs. Laballister, cleaning	2 00	
Atlas Assurance Coy., insurance on paper in hands of binders	6 73	
		$8,436 32

APPENDIX VII.

WOMEN'S RESIDENCE.

Balance on hand 1st July, 1905	$4,592 77	
Additional subscriptions and interest received	313 11	
		$4,905 88

Expenditure on Furnishing Account:			
T. Eaton Coy., furniture		$1,803 76	
John Kay, Son & Coy., carpets, etc.		996 30	
John Catto & Son, blankets, linen, etc.		592 41	
Gowans Kent & Coy., crockery		128 88	
Wm. Junor, crockery		7 50	
Wanless & Coy., cutlery		217 47	
W. Younger, chairs, etc.		128 30	
A. L. Gourley, tables, etc.		74 65	
Fletcher Mfg. Coy., sundry house furnishings		15 50	
Rice Lewis & Son, tray		4 05	
R. Simpson Coy., jars, etc.		6 40	
Mrs. Campbell, sundry disbursements		21 29	
			$3,996 51
Housekeeping Account:			$909 37
Receipts, rent and board		$6,757 15	
Expenses:			
Sundry persons, provisions and service...	$4,990 19		
Elias Rogers Coy., fuel	874 75		
Consumers' Gas Coy., gas	219 44		
Tor. Electric Light Coy., light	111 45		
City Treasurer, water	48 19		
Mrs. Campbell, superintendent's salary 6 mos., to 31st December, 1905.....	250 00		
		$6,494 02	
			$263 13
Balance at credit of account 30th June, 1906			$1,172 50

APPENDIX VIII.

UNIVERSITY OF TORONTO AND UNIVERSITY COLLEGE.

ANALYSIS OF EXPENDITURE FOR THE YEAR ENDING 30TH JUNE, 1906.

UNIVERSITY.

Cost of Administration relative to University		$137,181 85	
Less 1. University fees	$45,707 28		
2. Cost of three Departments maintained by the Government.....	53,819 37		
3. City grant for one Chair	3,000 00		
		$102,526 65	
Portion to be derived from General Income.....			$34,655 20

UNIVERSITY COLLEGE.

Cost of Administration relative to University College		$45,445 07	
Less 1. College fees	$20,383 00		
2. City grant for one Chair	3,000 00		
		$23,383 00	
Portion to be derived from General Income			$22,062 07

GENERAL INCOME.

1. From Endowment	$56,157 83
2. Regular Grant from Government	7,000 00
3. General Fees	4,044 35
4. Deficit to be paid by Government	61,294 98
	$128,497 16

Less interest on Trust Funds reserved.....	$11,029 22		
Cost of General Administration		$117,467 94 60,750 67	
Balance of General Income			$56,717 27
Proportion of General Income needed for			
University	$34,655 20	equal to 61.10 per cent.	
College	22,062 07	equal to 38.90 per cent.	
	$56,717 27		

THIRTY-SECOND ANNUAL REPORT

OF THE

Ontario Agricultural College

AND

Experimental Farm

1906

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO)

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO

Printed by L. K. CAMERON, Printer to the King's Most Excellent Majesty

1907

WARWICK BRO'S & RUTTER, Limited, Printers,
TORONTO.

To the Honourable WILLIAM MORTIMER CLARK, K.C.,

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the pleasure to present herewith for the consideration of your Honour the Report of the Ontario Agricultural College for 1906.

Respectfully submitted,

NELSON MONTEITH,

Minister of Agriculture.

TORONTO, 1907.

The Ontario Agricultural College

AND

Experimental Farm, Guelph, Ont.

HON. NELSON MONTEITH, Minister of Agriculture, Toronto, Ont.

STAFF OF PROFESSORS, LECTURERS AND DEMONSTRATORS.

1907.

G. C. Creelman, B.S.A., M.S. ..... President.
H. H. Dean, B.S.A. ..... Professor of Dairy Husbandry.
C. A. Zavitz, B.S.A. ..... Professor of Field Husbandry and Experimentalist.
J. Hugo Reed, V.S. ..... Professor of Veterinary Science.
G. E. Day, B.S.A. ..... Professor of Animal Husbandry and Farm Superintendent.
H. L. Hutt, B.S.A. ..... Professor of Horticulture.
J. B. Reynolds, B.A. ..... Professor in English.
S. F. Edwards, M.Sc. ..... Professor of Bacteriology.
W. R. Graham, B.S.A. ..... Manager and Lecturer in Poultry Department.
S. B. McCready, B.A. ..... Professor of Botany and Nature Study.
R. Harcourt, B.S.A. ..... Professor of Chemistry.
J. S. C. Bethune M.A., D.C.L. ..... Professor of Entomology and Zoölogy.
H. R. Rowsome ..... Lecturer in Apiculture.
W. P Gamble, B.S.A. ..... Lecturer in Chemistry and Geology.
H. S. Arkell, B.S.A. ..... Lecturer in Animal Husbandry.
T. D. Jarvis, B.S.A. ..... Lecturer in Entomology and Zoölogy.
E. J. Zavitz, B.A., M.S.F. ..... Lecturer in Forestry.
W. H Day, B.A. ..... Lecturer in Physics.
J. Buchanan, B.S.A. ..... Lecturer in Field Husbandry.
D. H. Jones ..... Dean of Residence and Instructor in English and Mathematics.
Alice Rowsome, B.A. ..... Assistant in Library and Instructor in French and German.
J. W. Eastham, B.S. ..... Demonstrator in Botany.
H. L. Fulmer, B.S.A. ..... Demonstrator in Chemistry.
H. S. Peart, B.S.A. ..... Demonstrator in Horticulture.
B. Barlow, B.S. ..... Demonstrator in Bacteriology.
J. E. Howett, B.S.A. ..... Demonstrator in Botany.
G. G. White, B.S.A. ..... Fellow in Chemistry.
C. C. Thom, B.S.A. ..... Demonstrator in Physics.
Miss Jean McPhee ..... Demonstrator in Chemistry.
G. Hibberd ..... Instructor in Drill and Gymnastics.

Office Staff.

S. Springer ..... Bursar.
J. B. Fairbairn ..... Secretary.
Miss Annie Hallett ..... Stenographer.

Physician.

W. O. Stewart, M.D.

Staff of Instructors, Macdonald Institute.

Miss M. U. Watson ..... Director of Home Economics.
John Evans ..... Professor of Manual Training.
E. W. Kendall ..... Instructor in Manual Training.
Miss Helen Given ..... Instructor in Domestic Science.
Miss Edna M. Ferguson ..... Assistant in Domestic Science.
Miss Rose Mina Greist ..... Instructor in Domestic Art.
Annie Ross, M.D. ..... Instructor in Physiology, Home Nursing, and Emergencies.
Miss Grace Greenwood ..... Instructor in Normal Methods.
Miss Emma Bigelow ..... Instructor in Laundry and Household Administration.
Captain Clark ..... Instructor in Drill and Gymnastics.

ONTARIO AGRICULTURAL COLLEGE

AND

EXPERIMENTAL FARM

FOR THE YEAR 1906.

GUELPH, December 31st, 1906.

To the Honorable the Minister of Agriculture:

SIR,—I have the honor to transmit herewith the Thirty-second Annual Report of the Ontario Agricultural College and Experimental Farm, including the Report of the Macdonald Institute.

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I have the honor to be, Sir,
Your obedient servant,

G. C. CREELMAN,
President.

ONTARIO AGRICULTURAL COLLEGE

PART I.

THE PRESIDENT.

The year 1906 has been marked by steady progress in all departments. The classes have been large and the professors, instructors, and officers have worked faithfully and well. Very little sickness has prevailed, and we close the year with a record of good work well done in the different departments.

Changes in the Staff.

In college life it seems impossible to go through any one year without some changes in the faculty of instruction. During 1906 we have lost some good men. Prof. F. Sherman, Jr., of Raleigh, North Carolina, resigned to return to the position he formerly occupied, viz., Professor of Entomology in the State Agricultural College of North Carolina. Prof. Sherman, though with us but one session, made during that time many warm friends and organized the department of Entomology and put it on a good working basis. He was succeeded by Rev. Dr. C. J. S. Bethune, editor of the *Canadian Entomologist*. Dr. Bethune comes to us with an international reputation as an entomologist, and his zeal in the work already started is evidence of his future success in the department.

In Botany, Prof. Wm. Lochhead came back from St. Anne de Bellevue to take charge of the work during the early months of the year, and on his leaving, finally, S. B. McCready, Professor of Nature Study, was transferred to the department of Botany, with the title of Professor of Botany and Nature Study.

The two Demonstrators in Botany, Mr. V. W. Jackson and Mr. E. Thompstone, had been with us but a short time when they were offered splendid positions elsewhere and we were glad to see them receive such promotion. Mr. Jackson went to Auckland, New Zealand, as Instructor in Nature Study and Agriculture, and Mr. Thompstone, to the Presidency of Bombay in India as Assistant Director of Agriculture. We were fortunate in securing the services of two enthusiastic young men for the department of Botany, Mr. J. W. Eastham, graduate in Agriculture from Edinburgh University and for four years Instructor in Science at a county agricultural school at Holmes Chapel in England; and Mr. J. E. Howitt, one of our own graduates, who had been doing post-graduate work at Cornell University since graduating here.

On the 1st of October, Mr. E. G. deCoriolis resigned his position in Chemistry to take an important position on a large sugar cane plantation in Cuba. This position has been filled by the promotion of Mr. H. L. Fulmer. Mr. Fulmer's place, a Fellow in Chemistry, was, in turn, filled by the appointment of Mr. G. G. White, one of our graduates of this year.

For some time we have been considering the advisability of establishing a department of English, with a professor in charge. This work has been superintended and largely conducted by Prof. J. B. Reynolds, but at

the same time Prof. Reynolds has also had charge of the work in Physics. This year the work has been divided, and Professor Reynolds is now Professor of English, while Mr. W. H. Day is responsible for the work in Physics, with the title of Lecturer. Mr. Day has as his assistant Mr. C. C. Thom.

It has also been necessary to make a change in the Residence Staff due to the resignation of Mr. F. H. Reed, Resident Master, who goes back into the College Course. This is a most important position, and we were fortunate in securing the services of Mr. D. H. Jones, of the Class of 1906, who is filling the position most acceptably at the present time.

Home Economics.

The work of this department is rapidly finding favor with the people of Ontario, as evidenced by the large number of ladies in attendance. Some changes have also been made in the Institute Staff. Miss M. I. Speller, teacher in Domestic Art, resigned in June, and was succeeded by Miss Rosemina Greist, graduate in Domestic Art of Pratt Institute and Teachers' College, New York. Miss Helen Holland also resigned, and was succeeded by Miss Edna Ferguson, who had substituted for Miss Holland during her leave of absence in the winter term. A new instructor has also been added to the list, in the person of Miss Emma Bigelow as Instructor in Laundry Work.

College Work and Progress.

The work in the different departments of the College has gone on pretty much as usual during the past year. On account of the large classes, especially in the Second Year, the class-room and laboratory work has been heavier than usual. The boys' dormitory is again filled to its utmost capacity and every available space, including the Doctor's office and the rooms in the hospital, has been called into requisition to accommodate students. We are asking at this time for an addition to our dormitory to accommodate forty students.

The bulletins prepared by members of the College Staff and published by the Department of Agriculture during the past year are as follows:

147. "Fruits Recommended for Ontario Planters," by Fruit Experiment Stations.

148. "Experiments with Nodule-forming Bacteria," by F. C. Harrison and B. Barlow.

150. "The Common Fungus and Insect Pests of Growing Vegetable Crops," by W. Lochhead and T. D. Jarvis.

151. "Farm Poultry," by W. R. Graham.

152. "Gardening for Schools," by S. B. McCready.

Forestry.

Although a new department, it has quickly made a place for itself, both at the College and throughout the farming districts of the Province. Applications have been received for more trees than we could possibly supply, notwithstanding the fact that a million seedlings were available this year. During the summer months some half-dozen students at the College were employed in the Forestry department, working regularly ten hours a day and at the same time receiving some instruction in forest nursery work.

Unfortunately, we have no land light enough on the farm suitable for the growing of pine and spruce seedlings. We are therefore obliged to rent a piece of land down on the river. This consists of four acres and was entirely covered with small trees this year. These have now been taken up and will be ready for distribution to the farmers' woodlots in the spring.

Short Courses.

These short courses, inaugurated a few years ago, continue to be very popular with the farming community. Men who are in full sympathy with our work, and yet cannot leave home for an extended course of instruction, take advantage of these short courses to attend lectures at the College for a few weeks. Three courses were given this year: One, a Two-Weeks' Course in Stock and Seed Judging, which was attended by 235 students, ranging in ages from 16 to 70; another, a Four-Weeks' Course in Poultry Culture, at which 28 students were in attendance; and a third, a Three-Months' Course in Dairying, with an attendance of 74.

Stock Judging at Chicago.

Last year I reported that five students from our Senior Class had participated in the Stock Judging Competition at the Great International Live Stock Exposition in the city of Chicago and had been successful in winning the Trophy for the best aggregate score in judging cattle, sheep, and swine. It is with the greatest possible pleasure and pride that I again report success of our team this year. The Trophy must be won three times in succession by the same college, and we have now won it twice. This year we had the additional honor of winning first place in the aggregate score for the judging of four classes of live stock, viz., horses, cattle, sheep, and swine. Mr. R. S. Hamer won this prize. Our boys further distinguished themselves by winning first, third, and fourth places in general proficiency, in competition in a class of 33 young men from the different States of the Union. There were money prizes in the General Proficiency Class, and the three young men mentioned won $160 out of the $300 offered. The names and addresses of the students composing the team are as follows: H. Barton, Vankleek Hill, Ont.; R. S. Hamer, Toronto, Ont.; W. J. Hartman, Woodbridge, Ont.; A. McKenney, Corinth, Ont.; and C. C. Nixon, St. George, Ont.

Excursions.

Farmers' Institute excursions to the College during the month of June still continue and seem to be as popular as ever. This year the farmers had an opportunity of inspecting our forest nursery and the working of the milking machine, and in both of these departments much interest was shown.

At the Macdonald Institute the women from the farms were entertained and instructed with practical demonstrations in cooking and laundry work by members of the Institute staff.

Teachers' Conventions.

Since the introduction of domestic science, nature study, and manual training into this College, the attention of the public school teachers of the Province has been called to the work of this Institution. During the spring and summer the following county teachers' associations visited us:

May 17 and 18... .....West Bruce.	June 15 ann 16 ....West Huron.
May 31 and June 1 .....East Bruce.	June 15 and 16 ....Haldimand.
May 31 and June 1 .....Oxford.	June 22 .....St. Thomas.

In each case they remained one or two days and were taken in charge by Prof. McCready, who conducted them through the different departments of the College and arranged for an evening programme. At that time the President and members of the Staff explained the workings of the Institution, and pointed out how our plant and equipment here could be utilized by the teachers of the Province for the betterment of rural schools. We found the teachers most interested, and as a result, many of them have come back for short courses in one or more of our departments.

Ontario Teachers' Association.

At their annual meeting at Easter time in the city of Toronto the Ontario Teachers' Association adjourned for one day and came to Guelph to visit the College. They had lunch at Macdonald Hall and spent the entire day going through our buildings and over our grounds. We are always glad to see the teachers here and will welcome them again at any time they see fit to pay us a visit.

British Teachers.

During the Fall Term the British Teachers that have been sent out by Mr. Mosely have been coming to us in small detachments. When Mr. Mosely visited Toronto during the summer, to make arrangements for those teachers to see the school systems of Canada and the United States, he gave implicit instructions to the Toronto authorities to see that arrangements were made that each of the teachers should spend at least one day at the Agricultural College. We have taken great pleasure in entertaining them and giving them an opportunity to see the workings of the Institution.

Press Association.

One of the greatest compliments that has been paid to the Institution for some time was a visit from the Canadian Press Association, at the time of their annual meeting in Toronto. Newspaper men from all over the country were present at that time and spent the entire day with us. Luncheon was prepared and served by the students at Macdonald Institute, and on their return home the Institution received many complimentary letters and newspaper notices from the journalists.

Farmers' Institutes.

On Nov. 18, 19, 20, and 21, the Superintendent of Farmers' Institutes for the Province gathered together at the College all of his Institute workers, some 60 in number, for the purpose of securing for them instruction along special lines, that their instructions to farmers, in turn, might be more uniform. We were glad to have them with us, and our Professors and Instructors, who occupied most of the places on the programme, reported to me that they were highly pleased with the results of the convention. We shall be glad to see them back again at any time, for now that the members of our staff have little time for Farmers' Institute work, I know of no way by which the College work can be presented to the farmers more directly

than through the Farmers' Institute workers who, in turn, attend Institute meetings during the winter months.

Women's Institutes.

On the 12th and 13th of December the Women's Institutes again held their annual convention at the College. More than 300 women assembled from the farms of Ontario and seemed to enjoy to the fullest extent talking over their difficulties and discussing subjects pertaining to the improvement of the home. Our Macdonald Institute students took the greatest interest in these meetings, attending them regularly and taking notes on the subjects discussed.

Return Visit of the Governor-General.

A special compliment was paid us by the return visit of His Excellency Earl Grey, Governor-General of the Dominion of Canada, who had been with us at the time of the Winter Fair in December, 1905. He was especially desirous of seeing the College when the fields were green and so came back in May, accompanied by Lady Sybil Grey, Miss Howard, and Mr. Leveson-Gower. In Toronto he was joined by Hon. J. J. Foy, Mr. Cathraw Mulock, and Mrs. W. J. Hanna, wife of the Hon. W. J. Hanna, Provincial Secretary. His Excellency and party spent the entire day going over the fields, through the live stock herds, and about the buildings and grounds, and returned to Toronto the same evening. We feel now that His Excellency has a personal interest in the Institution, and we appreciate to the fullest extent the report which he has sent to the Home Government in reference to the Ontario Agricultural College and Experimental Farm.

O. A. C. Review.

We should like to call your speical attention to the work being done by the O.A.C. "Review." This paper began in a modest way about seventeen years ago and has steadily grown in size and quality, until now it is one of the leading school magazines in the country. It is issued regularly on the first of each month, and the training received by certain students in the work of the Review, as managed at the present time, is very helpful to them as a preparation for work in after life. I refer both to the work of the editors and the work of the managers. Many of the strong men among our graduates have been directly connected, while students, with the editing of the College paper.

Experimental Union.

This meeting was held on the 10th and 11th of December, and with it came large numbers of ex-students, to help along the meeting and at the same time to re-visit their old College home. Everybody missed Mr. C. A. Zavitz, Secretary of the Union, who is spending this year away from the College visiting the different points of agricultural interest in Europe and the United States. He expects to return to his College duties on the first of the year. I beg to call your attention at this time to the excellent manner in which the duties of his office have been performed by the first assistant in the Experimental department, Mr. J. Buchanan, who has been constant in attendance at his duties and faithful in discharging the same.

Graduating Class.

Of this year's Graduating Class the majority are engaged in farming, and the following are the names of some of those who have secured positions away from home:

Agriculture.

Baker, M. R., Assistant Dominion Fruit Inspector, Ottawa, Ont.

Bracken, J., Good Seeds' Division, Dominion Department of Agriculture, Ottawa, Ont.

Brecken, W. D., Farm Manager, McCabe Estate, Bronte, Ont.

Chisholm, J., Farm Foreman, State University, Columbus, Ohio.

Craig, H. A., Superintendent of Fairs and Institutes, Edmonton, Alberta.

Duncan, R. S., Chemist, Ontario Sugar Co., Berlin, Ont.

Hammond, H. S., Assistant Chemist, Agricultural Experiment Station, Kingston, Rhode Island.

Munroe, J. F., Horticulturist, Experiment Station, Experiment, Georgia.

White, G. G., Fellow in Chemistry, O.A.C., Guelph.

Domestic Science.

Miss Katharine R. Bartlett, Teacher of Domestic Science, Ladies' College, Halifax, Nova Scotia.

Miss Ethel S. Bodwell, Teacher in Public School, in Northwest.

Miss Mae Card, Women's Institute Worker and Assistant in Chemical Department, Dept. of Agriculture, North Carolina.

Miss Minnie E. Gallup, Teacher of Home Economics in Ottawa Ladies' College, Ottawa, Ont.

Miss R. V. Gardner, Teacher of Home Economics in private school, Far Hills, New Jersey.

Miss Joan Hamilton, Teacher of Domestic Science, Consolidated School, Guelph.

Miss Helen McDunnough, Teacher of Y.W.C.A. Domestic Science Classes, Kingston, Ont.

Miss Maud Penfold, Teacher in Public School, in Northwest.

Miss Frances P. Pritchard, Teacher of Domestic Science, Public School, Florenceville, N.B.

Miss Erie Shand, Matron of Homewood Sanitarium, Guelph, Ont.

Miss Lila Kate White, Dietician in General Hospital, Hamilton.

Buildings Erected During 1906.

The new machinery hall which was commenced last year has now been completed. It is a handsome red brick building, situated on the site of the old carpenter shop. It presents a fine appearance, is well lighted, and suitable in every way to the purpose for which it was built.

A large addition has also been added to the Chemical Laboratory. This is not yet completed, but when finished, will add very materially to the equipment of that department. This has been found necessary because of the large additional classes in chemistry from Macdonald Institute.

In the Poultry Department a new building has been erected, large enough to accommodate 200 hens. The Poultry Manager wishes to experiment with a large number of hens in one pen. This will give him the opportunity he desires.

Outside Lectures.

A number of excellent lectures were delivered before members of our student body in Massey Hall at regular intervals during the year. These lectures proved very interesting and instructive, and we are obliged to these ladies and gentlemen for the assistance they have rendered us:

Dr. Abbott, Toronto, Ont.—"Education."
Mr. James Bowman, London, Ont.—"Pond Life."
Dr. A. P. Coleman, Toronto, Ont.—"South Africa."
Dr. J. Goggin, Toronto, Ont.—"Natural History."
Mrs. Mina B. Hubbard.—"A Woman's Way through the Wilds of Labrador."
Mr. C. C. James, Toronto, Ont.—"The Downfall of the Hurons—The first Chapter in the History of this Province."
Mr. W. E. Saunders, London, Ont.—"Birds."

Poultry Institute.

Probably no phase of agricultural work has made such rapid progress as the poultry industry during the last few years. Almost every day brings inquiries from farmers and others, and I am informed by the Deputy Minister of Agriculture that nearly every mail brings to him letters from residents of this Province for bulletins, reports, or general information in reference to the raising of fowl.

At the request of a number of those interested in poultry, we arranged last year for a Poultry Institute, to be held at the close of the Short Course in Poultry Raising. This was eminently successful; great interest was taken in the meeting, large numbers attended, and the report of the meeting, which was printed by the Department, has been in great demand. We hope to make this a permanent part of our work, and the Institute is already being arranged for 1907.

Canadian Entomological Society.

During the year the Canadian Entomological Society transferred its headquarters from London, Ont., to the Ontario Agricultural College. This means that our students will have access to a large and valuable collection of insects, as well as to one of the best entomological libraries in America. It means also that the "Canadian Entomologist," of which our Professor of Entomology, Dr. C. J. S. Bethune, has charge, will be edited here. We welcome the Canadian Entomologists to the College and hope we may be able, by increasing the membership and by the increased interest our students and professors will take in the work, to justify the removal of the Society to this place.

Conclusion.

In conclusion, I wish to thank you, as Minister of Agriculture, for the continued personal interest you have taken in this Institution; and through you, your Deputy Minister, Mr. C. C. James, who has helped us on so many occasions and at so many points. We realize that as your Department grows, you have less and less time to devote to detail, and yet we have never appealed, either to yourself or your Deputy, without receiving immediately assistance and co-operation.

I have the honor to be,

Your obedient servant,

Guelph, Dec. 29, '06. G. C. CREELMAN.

STUDENTS OF THE YEAR.

Attendance.

General Course	314
Specials in General Course work	16
Dairy Courses	74
Short Courses in Stock and Seed Judging	235
Short Course in Poultry Raising	28
	667

At Macdonald Institute.

Domestic Science	208
Nature Study	71
Manual Training	11
	290
Total in all Courses	957

There are also 136 students from the Guelph Collegiate Institute who received instruction in Domestic Science at Macdonald Institute.

Analysis of College Roll (General Course), 1906.

From Ontario.

Brant	7	Muskoka	5
Bruce	5	Northumberland	1
Carleton	7	Norfolk	1
Dufferin	1	Nipissing	1
Dundas	3	Ontario	6
Durham	1	Oxford	4
Elgin	8	Perth	6
Essex	3	Prescott	1
Grey	6	Peel	1
Glengarry	3	Parry Sound	1
Grenville	2	Peterboro	1
Hastings	3	Russell	2
Halton	12	Renfrew	1
Huron	6	Simcoe	12
Kent	1	Victoria	3
Leeds	2	Wentworth	9
Lincoln	3	Welland	9
Lanark	2	Wellington	26
L mbton	4	Waterloo	5
Lennox	2	York	30
Middlesex	9		

From Other Provinces of the Dominion.

Alberta	2	Nova Scotia	8
British Columbia	5	P. E. Island	2
Manitoba	3	Quebec	16
New Brunswick	4	Saskatchewan	3

From Other Countries.

Argentine Rep.	7	Germany	1
Belgium	1	India	1
England	28	Japan	2
Egypt	1	Jamaica	3
France	1	Mexico	1

From Other Countries—Continued.

New Zealand	1	Spain	2
Panama	1	U. S. A.	15
South Africa	2	Uruguay	1
Scotland	4		

Ages and Religious Denominations.

The limits of age of students in the General Course, 1906, ranged from 16 to 36 years. The average age was 20.

The religious denominations were represented as follows:

Presbyterians	108	Free Thinker	2
Methodists	80	Christadelphian	1
Episcopalian	71	Hinduism	1
Baptist	27	New Jerusalem	1
Roman Catholic	18	Quaker	1
Congregational	7	Jewish	1
Disciple	5	Mennonite	1
Friends	3	No Religion	1
Unitarian	2		

Bachelors of the Science of Agriculture.

Baker, M. R.	Swartmore, Penn., U.S.A.
Bracken, J.	Seeley's Bay, Ont.
Breckon, W. D.	Waterdown, Ont.
Chisholm, J.	State Univ., Columbus, Ohio.
Clark, J. A.	Bay View, P.E.I.
Colwell, H. H.	Oakville, Ont.
Craig, H. A.	North Gower, Ont.
Craig, John	Heward, Sask.
Dickson, J. R.	Seaforth, Ont.
Duncan, R. S.	Huntsville, Ont.
Evens, W. G.	Guelph, Ont.
Hammond, H. S.	Canterbury, England.
Klinck, C. R.	Victoria Square, Ont.
McCredie, A. L.	Lyons, Ont.
MacMillan, H. R.	Aurora, Ont.
McKay, K. G.	Heather Bell, Pictou, N.S.
Munro, W. A.	Chesterville, Ont.
Smith, H. B.	Wanstead, Ont.
Weir, D.	Montreal, Que.
White, G. G.	Perth, Ont.
Zubiaur, A.	Buenos Ayres, Arg. Rep.

Recipients of Associate Diploma.

Arkell, T. R.	Arkell, Ont.
Austin, H. S.	Lynn Valley, Ont.
Barnet, W. A.	Living Springs, Ont.
Bengough, W. L.	Toronto, Ont.
Brown, W. A.	Meaford, Ont.
Curran, G. B.	Orillia, Ont.
Caesar, L.	Mono Road, Ont.
Carpenter, J. F.	Fruitland, Ont.
Evens, N.	Randolph, Ont.
Frier, G. M.	Shediac, N.B.
Gilmour, J. D.	Doe Lake, Ont.
Glidden, E. K.	Compton, Que.

RECIPIENTS OF ASSOCIATE DIPLOMA—Continued.

Goulding, G. C. ..... Toronto, Ont.
Graham, R. R. ..... Mitchellville, Ont.
Greenshields, Melville ..... Montreal, Que.
Hare, J. H. ..... Cobourg, Ont.
Hayes, J. A. ..... Sheffington, Que.
Hodson, R. W. ..... Toronto, Ont.
Jewson, J. E. ..... Stone Quarry, Ont.
Knight, A. A. ..... Brackenrig, Ont.
Kerr, W. A. ..... Ashburn, Ont.
Langley, R. ..... Chatham, Eng.
McKenzie, D. A. ..... Greenhill, Ont.
McKinnon, G. ..... Guelph, Ont.
Middleton, F. ..... Clinton, Ont.
Murray, Chas. ..... Avening, Ont.
Nag Tany, B. R. ..... Toronto, Ont.
Owen, W. C. ..... Thornton, Ont.
Patch, A. M. W. ..... Torquay, Eng.
Rose, D. M. ..... London, Eng.
Row, C. A. ..... Langhorn, Penn.
Slater, A. E. ..... Lunbridge, Wales.
Salkeld, D. G. ..... Goderich, Ont.
Steckley, J. C. ..... Bethesda, Ont.
Sirett, A. W. ..... Rosseau, Ont.
Warren, F. B. ..... Gamebridge, Ont.
Walker, W. E. ..... Carluke, Ont.
Weaver, J. H. ..... Westfield, N.Y.
Wheaton, R. R. ..... Thorndale, Ont.
Wolverton, H. A. ..... Brandon, Man.
Woods, J. ..... O. A. C., Guelph.

FIRST CLASS MEN.

The work of the College is divided into departments, and all candidates who obtain an aggregate of seventy-five per cent. of the marks allotted to the subjects in any department, are ranked as first class men in that department. The following list contains the names of those who gained a first class rank in the different departments at the examinations held in April, 1906, arranged alphabetically:

First Year.

Allen, R. J., in one department, English and Mathematics.
Angle, P. E., in one department, English and Mathematics.
Boddy, R. A., in one department, English and Mathematics.
Cutler, G. H., in three departments, English and Mathematics, Physical and Biological Science.
Cooley, R. B., in one department, English and Mathematics.
Duff, H. C., in one department, English and Mathematics.
Holterman, W. I., in one department, Biological Science.
Jackson, W. D., in one department, Biological Science.
Jenkinson, R. H., in one department, Biological Science.
Lang, J. E., in one department, Biological Science.
Lawrence, C. A., in one department, English and Mathematics.
Lewis, F. G., in one department, English and Mathematics.
McEwen, C. F., in one department, English and Mathematics.
McGill, H. W., in one department, English and Mathematics.
McLaren, A., in four departments, English and Mathematics, Physical, Biological, and Agricultural Science.

Sirett, H., in four departments, English and Mathematics, Physical, Biological and Agricultural Science.

Strong, W., in two departments, English and Mathematics, and Biological Science.

Thompson, W. R., in three departments, English and Mathematics, Biological and Physical Science.

Turney, A. G., in two departments, Physical and Biological Science.

Waddell, W. M., in three departments, English and Mathematics, Physical and Biological Science.

Webster, H. B., in three departments, English and Mathematics, Physical and Agricultural Science.

Second Year.

Arkell, T. R., in three departments, English and Mathematics, Physical and Biological Science.

Curran, G. B., in one department, Agriculture.

Frier, G. M., in one department, English and Mathematics.

Gilmour, J. D., in one department, English and Mathematics.

Knight, A. A., in one department, Biology.

Rose, D. M., in two departments, English and Mathematics, and Biology.

Slater, A. E., in two departments, English and Mathematics, and Biology.

Wolverton, H. A., in one department, English and Mathematics.

Scholarships.

Scholarships of $20 each in money were awarded for groups of subjects in first year work as follows: Highest standing with a minimum of forty per cent. of the marks for each subject, and an aggregate of seventy-five per cent. of the total number of marks allotted to the subjects in the group:

English and Mathematics—H. C. Duff, Dobbinton, Ont.

Physical Science—H. B. Webster, Science Hill, Ont.

Biological Science—A. McLaren, Edinburgh, Scotland.

Agricultural Science—H. Sirett, Rosseau, Ontario.

Prizes—Second Year.

Prizes amounting to $10 each, in books, were given as follows:

First in General Proficiency, First and Second Year work. Theory and Practice—T. Reg. Arkell, Arkell, Ontario.

Essay, "Improving the Farm Homestead"—D. M. Rose, Woking, England.

Medal—Second Year.

Governor-General's Silver Medal—First in General Proficiency, First and Second Year work, 1905-1906.—T. Reg. Arkell, Arkell, Ontario.

Professional Dairy School Certificates issued during 1906.

Agur, Geo. F.	Jarvis, Ont.	Cheesemaking.
Bathgate, T. D.	Eganville, Ont.	Buttermaking.
Dool, W. W.	Bishop's Mills, Ont.	Cheesemaking.
Freund, W. H.	Columbus, Ohio	Cheesemaking.
Gilholm, Miss B.	Bright, Ont.	Buttermaking.
Godoy, H. V.	Argentine Republic	"
Hooper, V. A.	Fayetteville, Ark.	Butter and Cheesemaking.
Lund, T. H.	George, Iowa, U.S.A.	Buttermaking.
Matheson, Geo.	Shellmouth, Man.	"
Murphy, Wm. J.	Hickson, Ont.	Cheesemaking.
O'Hara, A. J.	Rupert, Que.	Buttermaking.
Stratton, R. W.	Guelph, Ont.	"
Whimsett, F. A.	Cumberland, Ont.	Cheesemaking.

FINANCIAL STATEMENT, 1906.

COLLEGE DEPARTMENT.

Expenditure.

Salaries and wages	$46,569 13	
Meat, bread, groceries, laundry, engine room supplies, and fuel	25,381 22	
Servants' pay list	2,762 13	
Advertising, printing, postage and stationery	3,578 23	
Maintenance, five laboratories	2,998 08	
Expenses, short courses	867 37	
Travelling expenses and extra lectures	1,098 70	
Library	1,997 36	
Scholarships	100 00	
Telephone service, rent, etc	380 00	
Unenumerated	995 59	
Furnishings and repairs	3,499 02	
Sewage	488 25	
School assessment, S. S. No. 7	90 60	
Temporary assistance	882 50	
Student labor	4,600 24	
Total expenditure		$96,288 42

Revenue.

Tuition and laboratory fees	$ 5,651 50	
Board	16,728 77	
Supplemental examinations	54 00	
Rent of Post Office boxes, Sept., 1906, to Sept., 1907	39 00	
Fines and breakages, Sept., 1905, to Sept. 1906	337 41	
Analysis of water (Chem. Laboratory)	26 00	
Rent of cottages	220 00	
Sale of brushwood	2 00	
Sale of old range	2 00	
Sale of old mare $100.00 (less service of horse, $11.00)	89 00	
Sale of old refrigerator	7 00	
Sale of windmill top	4 00	
Rent of rooms	76 00	
Sale of scrap iron	10 00	
Total revenue		$23,246 68
Net expenditure		73,041 74

MACDONALD INSTITUTE AND HALL.

Expenditure.

Salaries and wages	$14,410 00	
Servants' pay list	1,724 80	
Bread, meat, groceries, furnishings, repairs, engine room supplies and fuel	12,523 88	
Maintenance of laboratories in Institute	2,840 72	
Library and stationery	1,197 46	
Total expenditure		$32,696 86

Revenue.

Tuition and laboratory fees	$ 4,243 50	
Board	11,412 55	
Sale of supplies to nature study students	25 13	
Fines and breakages	207 90	
Total revenue		$15,889 08
Net expenditure		16,807 78

FORESTRY DEPARTMENT.

Expenditure.

Wages, trees, seeds, furnishings, repairs, etc.		$3,485 48

STUDENT LABOR, 1906.

Total Per Month.

January	$542 35	
February	634 38	
March	394 10	
April	186 45	
May	337 65	
June	408 72	
July	331 30	
August	33 17	
September	311 32	
October	660 94	
November and December	759 86	
		$4,600 24

To Different Departments.

College Department	$427 88	
Macdonald Institute	13 56	
Forestry	2 97	
Chemical Laboratory	85 12	
Bacteriological	11 80	
Entomological	242 99	
Physical	138 64	
Biological	42 88	
Farm Department	935 89	
Experimental	765 24	
Poultry	606 19	
Horticultural	547 62	
Dairy Department	275 63	
Mechanical	503 83	
		$4,600 24

FARM DEPARTMENT.

Expenditure.

Permanent improvements	$ 498 52	
Wages of foremen, men, and stenographer	5,129 04	
Purchase of stock for breeding and feeding	7,969 90	
Maintenance of stock, feed, etc.	1,490 31	
Farm maintenance (including repairs, blacksmithing, binder twine, seed, furnishings, fuel, light, advertising, printing, stationery, tools, implements, etc.)	1,649 28	
Contingencies	180 34	
Total expenditure		$16,917 39

Revenue.

Sale of Cattle:		
32 steers, 43,145 lbs., at from 4c. to 5c.	$2,112 30	
13 steers for	545 00	
2 bulls for	95 00	
3 cows, 2 heifers and 1 calf	305 00	
		$3,057 30

Sale of Pigs:		
122 hogs, 24,478 lbs., at from $4.70 to $7.75 cwt	$1,615 74	
16 pigs for	174 50	
		1,790 24
Sale of Sheep:		
5 sheep	$21 00	
10 lambs	40 00	
		61 00
Sale of Carcasses used at Short Courses:		
4 beef, 4,010 lbs., at 7c., $280.70; 4 hides, $32.60; less killing, $14.65	$298 65	
		298 65
Service of Animals:		
Bull	$55 00	
Boar	48 50	
Ram	20 00	
		$123 50
Sale of Wool:		
128 lbs. unwashed, at 15½	$19 85	
225 lbs. unwashed, at 19c	42 75	
		62 60
Sale of Hides:		
2 for $7.16		7.16
Sale of old team		85 00
Sale of old iron		1 50
Sale of Grain:		
188 bushels barley at 75c	$141 00	
157 bushels, 35 lbs., wheat at 70c	110 30	
24 bushels oats at 50c	12 00	
2 bushels corn at $1.00	2 00	
		265 30
Sale of Potatoes:		
96 bags at 90c	$86 40	
8 8-9 bags at 75c	5 15	
		91 55
Sale of Bags:		
85 at 20c		17 00
Total revenue		$5,860 80
Net expenditure		11,056 59

[N.B.—Nothing allowed the Farm department for the feed of dairy stock, feed, etc., of the department horses and supplies for the College.]

EXPERIMENTAL DEPARTMENT.

Expenditure.

Permanent improvements	$ 415 39	
Assistant, specialist in plant breeding, stenographer, foreman, teamsters and laborers	6,308 72	
Seeds, manure and special fertilizers	504 15	
Furnishings, implements, repairs (blacksmithing, etc.)	497 62	
Printing, postage, stationery, contingencies, etc	324 39	
		$8,050 27

DAIRY DEPARTMENT.

Expenditure.

Permanent improvements, including milking machine ($200.00)	$224 67	
Wages, including foreman, cheesemaker, buttermaker, herdsman, engineer, stenographer and book-keeper	2,571 14	
Milk for experimental cheese and butter making	8,223 40	
Purchase of cows	759 00	

Feed and fodder		260 27	
Furniture, furnishings, repairs, etc., laboratory expenses, gas, chemicals, etc., and contingencies		609 46	
Fuel and light		680 07	
Total expenditure			$13,328 01

REVENUE.

Sale of Butter:			
39,113 lbs. at from 15c. to 30c		$9,129 13	
Sale of Cheese:			
12,958¼ lbs. at from 8c. to 15c		1,597 60	
Sale of Milk:			
6,145 quarts at 4c	245 80		
21,892¾ lbs. at $1.60 cwt	350 26		
		596 06	
Sale of Skim Milk and Whey:			
64,000 lbs. at 10c. cwt	$64 00		
8,150 lbs. at 20c. cwt	16 30		
Season's whey	20 00		
		100 30	
Sale of Cream:			
1,083 3-5 quarts at from 15c. to 40c		210 88	
Sale of Cattle:			
11 calves	$ 21 50		
3 bull calves	110 00		
9 cows	245 00		
		376 50	
Sundries:			
Rennet	$ 60		
Milk tested	1 25		
3 butter boxes	60		
1 bottle	25		
Old pump	5 00		
Old rope	40		
Refund express	30		
Rent of house	16 00		
		25 40	
Total revenue			$12,035 87
Net expenditure			1,292 14

[N.B.—Nothing allowed for milk and cream supplied by Dairy Department to the College.]

DAIRY SCHOOL DEPARTMENT.

EXPENDITURE.

Permanent improvements, cement floors, walks, etc	$ 3 55	
Wages of instructors, engineer, janitor, stenographer and book-keeper	1,575 00	
Cleaning, painting, repairs and contingencies	233 55	
Dairy appliances, separators, vats, expenses cheese and butter judges, inspecting factories, etc	469 86	
Advertising, printing, stationery, postage, books, papers, etc	94 09	
Fuel and light	593 30	
Purchase of milk for use in school	3,835 47	
Total expenditure		$6,804 82

REVENUE.

Fees:		
34 residents	$34 00	
6 non-residents	36 00	
	$ 70 00	

Breakages		3 75	
Sale of Butter:			
11,742 lbs. at from 15c. to 30c		3,034 39	
Sale of Cheese:			
2,445½ lbs. at from 5c. to 13c		261 02	
Sale of Milk:			
1,625 quarts at 4c	$ 65 00		
9,481½ lbs. at $1.60 cwt	151 69		
		216 69	
Sale of Cream:			
452 quarts at 20c		90 40	
Sundries:			
Milk tested	$ 10		
Refund freight	1 25		
Old iron	20		
		1 55	
Total revenue			$3,677 80
Net expenditure			3,127 02

[N.B.—Allowing nothing for milk and cream supplied to the College by the Dairy School.]

POULTRY DEPARTMENT.

Expenditure.

Wages of assistant, stenographer, and temporary assistance	$ 813 60	
Furnishings and repairs	507 60	
Permanent improvements	89 96	
Purchase of stock	199 95	
Purchase of horse	175 00	
Fuel, light and contingencies	305 11	
Experiments with incubator, fattening and feed	1,743 67	
Total expenditure		$3,834 89

Revenue.

Sale of Eggs:			
For Hatching—			
1,092 eggs at 5c	$ 54 60		
107⅔ set. at from 75c. to $2.50	128 75		
		$183 35	
For Domestic Use—			
1,072⅔ dozen at from 10c. to 35c		208 77	
Sale of Live Poultry:			
127 birds at from $1.00 to $50.00		307 60	
Sale of Dressed Poultry:			
4,440 lbs. at from 10c. to 44c	$604 35		
106 ducks	66 40		
2 geese at $1.00	2 00		
8 squabs at 25c	2 00		
		674 75	
Sale of Feathers:			
5 lbs. at 25c		1 25	
Sale of 100 lbs. beef scrap		3 00	
Total revenue			$1,378 72
Net expenditure			2,456 17

HORTICULTURAL DEPARTMENT.

Expenditure.

Permanent improvements	$ 202 55	
Head gardener and foreman, florist, assistant in plant breeding, assistant and night fireman, teamsters, assistant gardener, stenographer and laborers	5,864 65	
Manure, trees, plants, bulbs, seeds, cold storage experiments, implements, tools, furnishings, repairs and contingencies	1,394 28	
Fuel and light	997 58	
Wax fruit models	399 55	
Total expenditure		$8,858 61

Revenue.

60½ crates strawberries at $1.00	$60 50	
12½ dozen cabbage at 40c	4 90	
4½ bags onions at $1.00	4 50	
¼ dozen squash at $1.00	25	
Total revenue		$70 15
Net expenditure		8,788 46

Note. Products supplied to College, except when more than required.

MECHANICAL DEPARTMENT.

Expenditure.

Salary of foreman	$800 00	
Tools, fuel and light	136 45	
Total expenditure		$936 45

SUMMARY.

	Expenditure.	Revenue.	Net Expend.
College Department	$96,288 42	$23,246 68	$72,041 74
Forestry Department	3,485 48	.....	3,485 48
Macdonald Institute and Hall	32,696 86	15,889 08	16,807 78
Total	$132,470 76	$39,135 76	$93,335 00
Farm Department	$16,917 39	$ 5,860 80	$11,056 59
Experimental Department	8,050 27	.....	8,050 27
Dairy Department	13,328 01	12,035 87	1,292 14
Dairy School	6,804 82	3,677 80	3,127 02
Poultry Department	3,834 89	1,378 72	2,456 17
Horticultural Department	8 858 61	70 15	8,788 46
Mechanical Department	936 45	.....	936 45
Total	$58,730 44	$23,023 34	$35,707 10
Total net expenditure, College			$93,335 00
Total net expenditure, Farm			35,707 10
Total net expenditure			$129,042 10

Yours truly,

S. Springer,

Bursar and Superintendent.

PART II.

THE DEAN OF RESIDENCE.

To the President of the Ontario Agricultural College:

SIR,—I have the honor to present my report as Dean of the Residence for the year ending Dec. 31st, 1906.

With the new year my tenure of office as Resident Master began. My duties required me to preside in the college dining-hall, to conduct roll-call and prayers, to see that the evening study hour was observed, and to adopt all measures whereby a healthy, happy, wholesome life should obtain for the students in residence, and that should ensure the prevalence of that mental, moral, and social atmosphere within the dormitories most conducive to profitable study.

As I had lived in the College under the *regime* of the last two of my predecessors, I was able to appreciate the many worthy features of the dormitory discipline which they advocated and maintained; and it has been my endeavor to carry on the work of residence management with similar ideals in view to those which were entertained by these gentlemen, Messrs. McLean and Reed.

On entering upon my duties I found that there were 175 students in residence. This meant that every bed in the institution, including the five beds in the hospital, was occupied. So long as there was no sickness this arrangement worked all right; but when, as was the case several times, a student was indisposed for a few days, during which time it was desirable for him to remain in his room, considerable inconvenience was caused. However, we had no sickness worse than influenza, colds and tonsilitis.

During the summer the halls and rooms were whitewashed and considerable painting was done, thereby giving the interior a bright and cheerful aspect. The roof, however, is somewhat out of repair. Into some of the rooms on the upper flat the water percolates during rain-storms and when the snow melts. It is the opinion of Mr. Crawford that a new roof is necessary, for the repairs done during the summer have proven ineffectual, and such, he says, has been the case for five or six years, no patching being adequate to the requirements of the case.

Our smokers, though few in number, are grateful for the renovation and re-furnishing of the smoking-room. Though promiscuous smoking in the residence was never common, the general comfort and bright appearance of the smoking-room this year has reduced the practice, and soon we expect to have smoking confined entirely to the one room prepared for it.

On the whole, the students realize that within the residence they have better opportunities for pursuing their studies and for developing themselves generally, than obtains outside. The consequence is, that whenever a vacancy occurs, we have a number of applications from outside boarders for the place.

It has been our policy, as far as possible, to instil into each individual student a spirit of self-dependence, self-reliance, and self-government, by placing him on his own responsibility, and in the majority of cases the result has been most gratifying. On the whole, the men realize that they are on their honor and conduct themselves accordingly.

Respectfully submitted,

DAN. H. JONES.

PART III.

THE PROFESSOR OF ENGLISH.

To the President of the Ontario Agricultural College:

SIR,—I have the honor to submit herewith my twelfth annual report in the department of English.

My previous reports have been from two distinct departments, Physics and English. Early in the present year a division of the two departments was effected, whereby I assumed charge of the English department and relinquished the work of the department of Physics. For some years I have recommended the appointing of a Professor of English, since the work of the two departments had been proving too onerous and too distracting to enable me to do justice to either. I had not seriously entertained the idea of surrendering the work in Physics, since that work appeared to offer greater opportunities at an agricultural college than the work in English. Upon your suggestion, however, I finally agreed to the change that has been made. Although I felt at the time, and feel yet, that I have sacrificed opportunities for serving the larger public outside the College, nevertheless, I believe that the solution that was adopted was the best possible.

THE WORK IN PHYSICS.

The work in Physics has been, during my time here, built up from the bottom. Practically no Physics had been taught, and certainly no investigation work had been undertaken until about ten years ago. The work has extended until it covers studies and investigation throughout the four years of the agricultural course; besides, it has offered several lines of independent investigation which have proved of considerable interest and importance. At the present time new lines of investigation have been taken up, and with the new equipment which the department of Physics is being provided with, in the shape of glass houses for soil investigation, still greater opportunities will present themselves.

My personal regret at surrendering this inviting field of work was lessened by the fact that it was being handed over to one thoroughly capable of taking charge of it. Mr. Day, the present head of the Physics department, had proved himself a most capable assistant, and had given evidence of being a careful and original investigator. In the short time that he has had sole charge of the department, he has fully justified the confidence that was placed in him, and I am sure that he will develop to the full extent the possibilities offered by this branch of agricultural science.

A little over a year ago some work in drainage was undertaken by the department of Physics, whereby the department agreed to survey farm lands that required drainage and to prepare plans and furnish directions, by the aid of which the work of drainage could be successfully completed for each area surveyed. This offer met with the approval of the Minister and was announced through the public press, and the response has been gratifying. The engineering difficulties are easily dealt with through the aid of the instruments which we have in the department of Physics, and the technical problems have been made the subject of study for some years in that department. Personally, in reporting upon the work that I have done myself, I am much gratified in knowing that I have been enabled to give correct

advice in several rather difficult situations and have enabled farmers to go confidently with the work of draining land. As I had personally engaged to carry out certain pieces of work in different parts of the country before surrendering charge of the department of Physics, I have attended to these myself during the past season, and have surveyed four farms at Winona, two at Jordan Harbor, one at Mount Forest, one at Exeter, and two at Fergus. In addition to these, Mr. Day will, of course, report upon the places that he visited, and, I believe, he has done more work in this direction than I have done.

In one instance I found a tract of 50 acres of land of first-class quality that, nevertheless, had never produced a full crop, because it was lying low and flat. Over this tract of land there was a fall of only one and a quarter inches in one hundred feet. With careful grading of the ditch bottom and careful laying of the tile, this fall will carry off the water satisfactorily. At another point, I had a farm of 75 acres to survey. This farm had been occupied by the present owner for twenty years, and he had, during all that time, been aware that over a large part of his farm drainage was badly needed. In this particular instance the owner had been balked by two difficulties, first, to know the direction in which the water should be carried at certain places in the farm; and, secondly, until this were definitely decided he could not force an outlet, since the outlet in any event must be found through a neighbor's farm. When it had been determined by the levelling instrument that the natural outlet was in a certain direction, the neighbor, over whose land the water was to be carried, acquiesced. Up to that time the owner had not been able to obtain acquiescence on the plea that possibly the natural water course was in the opposite direction. Still another instance: At Jordan Harbor a little patch of peach trees in the middle of an orchard had been killed out by the wet soil. I was able to show the owner that this little patch of land could be drained without difficulty and the drain joined to a neighbor's drain, who also was undertaking a similar work for his own orchard. In the latter instance the total cost of the drain would be less than the owner's loss in peach trees.

Another line of investigation that I have continued in connection with the Physics is an inquiry into the growing of tobacco in southern Ontario. My report upon this will be forwarded to the Department of Agriculture separately.

The Work in English.

The work in English at present consists of a course with each of the four classes at the Agricultural College; and, in addition, a course with three classes at the Macdonald Institute. The work at the Agricultural College proper has passed the experimental stage and has been reduced to a satisfactory system, wherein the grade and quantity of work assigned to each class seems to be suited to the requirements of that class. The English course at the Macdonald Institute, however, is as yet in the experimental stage, this being the first year in which we have followed any prescribed course with classes there. The classes taking English are: The Senior Normal class, the Junior Normal class, and the Home Makers. The Normal classes are, by the requirements for admission to the Institute, University Matriculants. Some of the students of last year having expressed a wish to follow university work with a view to admission to university standing in Domestic Science, I have specified for the Junior Normal class the first year University English and for the Senior Normal class the second year

University English. Arrangements have not yet been completed whereby, upon passing the English examinations in the first and second years the Normal classes will be admitted to the University *pro tanto*; and I herewith direct your attention to the question: Provided the Junior Normal class are successful in passing the Senior Matriculation examination in English and, thereafter, in the following year, succeed in passing the second year English at the University, will they be granted *pro tanto* standing in these subjects? This is a question to be taken up with the University Senate.

The Home Makers' class for the present year have been assigned the same work in English as our Second Year class. On account of the very large number in the present Second Year, the union of the two classes makes the class entirely too large for satisfactory work. This is an experiment which I shall not care to repeat. I find it impossible to do any kind of individual work with students in very large classes, and a certain amount of individual work is necessary in the way of questioning, reading in classes, and other exercises, before satisfactory results can be attained. Either the classes must be taken separately, or some other combination must be sought.

While joint classes will be advisable in order to prevent duplication of work, the joining will have to be effected with classes numerically small. The present Second Year, even by itself, is too large for satisfactory work. The First Year class was divided some years ago on account of being too numerous to be handled singly, when the number of the class was not greater than that of the present Second Year. For English work, at any rate, if the number of this class continues to be as great as it is this year, it will be advisable to consider continuing in the Second Year the division adopted in the First Year.

I wish to add that the additions to the Library for the department of English have been liberal in number and well chosen. Also, I desire to express my high appreciation of the services of Mr. D. H. Jones, Dean of the Residence, for the assistance that he has rendered in teaching English. Mr. Jones is very well read, and has proved himself capable of handling English classes efficiently.

Respectfully submitted,

J. B. REYNOLDS.

PART IV.

THE LECTURER IN PHYSICS.

To The President of the Ontario Agricultural College:

SIR,—I have the honor to submit herewith my first report as head of the department of Physics.

Until the close of the last academic year, English and Physics constituted one department, under the direction of Professor J. B. Reynolds. But in April the department was divided, the Physics being placed under the direction of the writer, with Mr. C. C. Thom as assistant. It has been our endeavor to continue the work of the department on the same broad, practical lines followed by Prof. Reynolds.

In the first year the instruction in the department consists of courses in arithmetic, hydrostatics as a preparation for and followed by Soil Physics, and lastly a course in the principles of mechanics. The work of the second years consists of surveying, drainage, and farm power by electricity, wind and water. The third year make a specialty of meteorology, cold storage, ventilation, based upon a thorough course in Heat. In the final year, climatology, advanced drainage, and advanced soil Physics are emphasized.

LABORATORY WORK.

Laboratory practice is given all the years in the various subjects. There is one change that I would respectfully submit for your consideration, viz., that the present practical work in Soil Physics, instead of coming in the fourth year, be transferred to the second year. This work illustrates and impresses the elementary and fundamental principles that govern the securing of proper soil conditions. Under existing arrangements, men completing the diploma course and not returning for the degree have little or no practical work in this subject, though such a course would enable them to grasp more fully the importance of the physical properties of the soil such as moisture, heat, air, and sanitary conditions; and not only to grasp their importance but to control them by adapting actual tillage operations to the producing of the desired conditions. This change would not necessitate any more time—merely a re-arrangement of our present time—but it would necessitate the fitting up of a portion of our present laboratory space specially for work in Soil Physics. In the fourth year, we are unable to do any advanced work on this subject, because all the time at the disposal of the class is taken up with the elementary experiments which are necessary before problems more involved can be undertaken. Under the proposed rearrangement, the elementary work would be covered in the second year, leaving the final year free for the laboratory study of more advanced problems. It is only fair to add that this proposition was under consideration at the time the department was divided.

DRAINAGE.

The work of assisting farmers in the drainage of their lands begun last year has been continued. In July the following announcement was sent to some 200 of the papers of the Province:

"The department of Physics is endeavoring to emphasize to farmers the importance of the proper drainage of their land, and has brought the matter to the attention of the Ontario Minister of Agriculture. The matter

has met with such hearty approval from him that he has authorized the department to send representatives among the farmers where requested, to take the levels of land, locate the drains, and give information generally on the subject, the only expense connected with it being the travelling expenses of one man. It is the intention that where two or more persons in the same vicinity have work to be done they arrange together to have all done during the same trip, each one paying his proportionate share of the expenses. This, of course, reduces the individual outlay to a very small sum."

This announcement was warmly received by the papers generally, as most of them not only published it but also editorials on the subject. The response from the people has been very gratifying. We have already done work for some thirteen or fourteen different parties, and have several other enquiries, some of which will doubtless result in further demands upon our services.

Weather Report for 1906.

Weather records have been kept at Guelph and other stations as in previous years. The results are given in the following tables:

Table I. Weather Report of 1896 at the O. A. C., Guelph.

	Jany.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Mean temperatures	28.4	20.7	23.9	44.2	55.2	65.2	67.7	69.5	63.6	47.7	34.0	20.0	45.00
Departure from normal	+9.6	+1.7	-2.7	+2.5	+1.7	+1.7	-.4	+3.3	+4.5	+.8	0.0	-4.8	+1.5
Lowest temperature	5.0	-15.5	-2.5	27.0	30.5	40.0	42.0	47.0	33.0	23.0	20.0	-8.0	-15.5
Highest temperature	57.0	56.7	45.0	70.5	82.5	87.0	85.5	87.5	89.0	73.0	56.0	39.0	89.0
Snowfall in inches	9.75	6.00	11.65	2.75	.....	.....	.....	.....	.....	1.10	.....	6.00	37.2
Rainfall in inches	1.71	.20	.67	1.166	2.71	4.06	4.65	2.13	2.49	4.27	2.35	1.27	27.70
*Precipitation in inches	2.72	.80	1.83	1.44	2.71	4.06	4.65	2.13	2.49	4.38	2.35	1.87	31.42
Departure from normal	+.81	-.80	+.43	-.13	+.41	+1.02	+1.63	-.13	+.21	+2.01	+.25	+.19	5.86

* Calculated by 10 inches of snow being equivalent to one inch of rain.

Table II. Temperatures at Outside Stations.

Mean temperatures.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Maitland	24.33	16.25	23.54	38.65	50.10	65.20	69.32	70.58	61.91	47.38	31.96	13.64	42.74
Magnetawan	20.36	13.32	13.94	39.45	46.88	62.00	63.91	64.98	58.94	43.85	29.46	9.66	38.90
Marksville	24.78	20.76	20.58	40.46	47.58	61.50	64.8	65.8	60.43	44.58	34.55	16.53	41.86
Milberta (Charlton)	11.90	4.54	6.90	39.11	45.33	61.82	63.90	64.40	57.00	42.56	24.35	4.41	35.52
Bay View, P. E. I.	.....	.....	.....	.....	.....	.....	66.3	65.9	55.6	48.0	36.14	22.17	.....
Leamington	.....	.....	.....	.....	.....	.....	70.17	74.21	68.83	50.74	39.08	28.67	.....
Highest temperatures.													
Maitland	59.0	53.0	39.0	69.0	79.0	84.0	88.0	91.0	86.0	79.0	56.0	42.0	91.0
Magnetawan	53.0	45.0	43 0	68.0	81.0	81.0	85.0	85.5	83.0	75.0	50.0	39.0	85.5
Marksville	44.0	48.0	42.0	65.0	77.0	80.0	86.0	85.0	87.0	75.0	46.0	38.0	87.0
Milberta (Charlton)	39.0	46.0	32.0	68.0	80.0	85.0	89.0	91.5	90.0	75.0	46.0	35.0	91.5
Bay View, P. E. I.	.....	.....	.....	.....	.....	.....	83.0	86.0	76.5	70.0	46.0	49.0	86.0
Leamington	.....	.....	.....	.....	.....	.....	88.0	89.0	89.0	74.0	56.0	49.0	89.0
Lowest temperatures.													
Maitland	-5.0	-21.0	-1.0	19.0	30.0	37.0	46.0	43.0	31.0	20.0	12.0	-21.0	-21.0
Magnetawan	-25.0	-38.0	-22.0	13.0	24.5	30.0	35.0	38.5	27.0	18.0	1.5	-34.0	-38.0
Marksville	-9.0	-40.0	-20.0	21.0	25.0	34.0	42.0	40.0	35.0	20.0	11.0	-23.0	-40.0
Milberta (Charlton)	-26.0	-45.0	-27.0	18.0	20.0	25.0	33.0	33.5	27.0	15.0	-8.0	-40.0	-45.0
Bay View, P. E. I.	.....	.....	.....	.....	.....	.....	48.0	47.0	38.0	28.0	21.0	-5.0	.....
Leamington	.....	.....	.....	.....	.....	.....	49.0	51.0	40.0	25.0	22.0	10.0	.....

Table III. Summary O. A. C.

Year.	Snow.	Rain.	Precipitation.	Mean Temperatures.	Date of last killing frost in Spring.	Date of first killing frost in Autumn.	Days between killing frosts.
1882	54.8	17.95	23.43	44.0	May 6	Oct. 19	166
1883	53.5	18.16	23.51	41.9	" 10	Sept. 9	122
1884	57.7	20.22	25.99	43.4	" 29	" 19	113
1885	45.7	15.57	20.14	40.9	" 11		
1886	70.3	22.43	29.46	43.2	" 17	Oct. 16	152
1887	51 4	15.78	20.92	43.5	April 27	Sept. 24	150
1888	32.7	17.99	21.26	42.0	May 2	" 14	135
1889	76.6	20.16	27.82	44.2	April 22	Oct. 6	168
1890	15.1	16.22	17.73	44.7	May 21	Sept. 25	127
1891	56.9	24.91	30.60	47.5	" 24	" 1	100
1892	26.3	25.05	27.68	43.2	" 28	Oct. 2	127
'1899	26.0	20.48	23.08	42.1	April 16	Sept. 23	160
1900	41.1	22.61	26.72	45.6	May 10	Oct. 17	160
1901	56.7	22.48	28.15	43.1	" 15	" 4	141
1902	30.0	25.13	28.13	43.3	" 10	" 10	153
1903	22.2	19.47	21.69	44.4	" 2	Sept. 29	150
1904	51.3	23.88	29.01	40.1	April 22	Oct. 4	165
1905	47.1	24.18	28.89	43.6	" 24	Sept. 26	154
1906	37.2	27.70	31.42	45.0	" 28	Oct. 11	166
Average.	44.9	21.07	25.56	43.5			145

Table IV. Precipitation at Outside Stations.

Precipitation.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Year.
Maitland.													
Rain	1.30	.45	1.05	.76	1.75	5.42	1.30	1.53	3.12	2.83	1.53	1.01	22.05
Snow	1.2	3.5	2.2	.6							4.	6.50	18.00
Precipitation, rain	1.42	.80	1.27	.82	1.75	5.42	1.30	1.53	3.12	2.83	1.93	1.66	23.85
Magnetawan.													
Rain	2.31	.57	1.74	2.57	1.95	6.52	.64	8.80	3.49	5.25	2.96	.92	37.72
Snow	24.3	21.2	17.4	2.5						2.2	7.7	19.8	95.10
Precipitation	4.74	2.69	3.48	2.82	1.95	6.52	.64	8.80	3.49	5.47	3.73	2.90	47.23
Marksville.													
Rain	0.	0.	1.0	1.70	2.06	4.94	1.34	1.63	3.85	3.16	2.32	.5	22.5
Snow	12.0	6.0	20.0								4.0	13.0	55.
Precipitation.	1.2	.6	3.00	1.70	2.06	4.94	1.34	1.63	3.85	3.16	2.72	1.8	28.00
Milberta.													
Rain	2.0	1.0			2.81	3.92	3.24	1.63	2.24	2.40	.4		19.64
Snow	12.0	14.0	25.0							3.0	11.0	9.0	74.00
Precipitation	3.2	2.4	2.5	0.	2.81	3.92	3.24	1.63	2.24	2.70	1.5	.9	27.04
Bay View, P. E. I.													
Rain								1.59	2.33	3.13	8.49	3.28	
Snow											5.45	40.20	
Precipitation.								1.59	2.33	3.13	9.04	7.30	
Leamington.													
Rain							3.14	1.67	1.71	3.55	2.79	3.80	
Snow												6.50	
Precipitation.							3.14	1.67	1.71	3.55	2.79	4.45	

Table V. Length of Season at Outside Stations.

Station.	Last killing frost in Spring.		First killing frost in Autumn.		No. of days between.
	Date.	Deg.	Date.	Deg.	
Maitland	May 10th	30	Oct. 7th	30	150
Magnetawan	June 12th	30	Sept. 24th	27	104
Marksville	May 30th	30	Oct. 1st	30	124
Milberta	June 12th	30	Sept. 15th	29	94
Bay View			Oct. 17th	28	
Leamington			Oct. 10th	30	

INVESTIGATIONS.

Evaporation.

In last year's report of this department, under the heading "Investigations in Transpiration," mention was made of the fact that we had been hampered in our work by the lack of a reliable evaporimeter, and that we were designing one that we hoped would prove satisfactory. I am glad to be able to state that the instrument has been a success beyond our most sanguine expectations, and the results are so promising that, as a matter of prudence, I refrain from publishing a description of the instrument now.

Table VI. Showing Depth of Evaporation.

Small evaporimeter in thermometer shelter.			Large evaporimeter in open reservoir 100 feet x 60 feet and 12 feet deep.			
Period.	Evaporation: Depth in inches.		Period.	Evaporation: Depth in inches.		Total for month at same average per day.
	Total for Period.	Mean Daily.		Total for Period.	Mean Daily.	
May 17-31	3.600	.240				
June 29 days..	4.996	.172	June 23-27 and 30th..	.950	.158	4.640
July 31 " ..	6.400	.206	July 21 days.....	4.696	.213	6.603
Aug. 31 " ..	6.644	.215	August 28 days.....	6.594	.236	7.316
Sept. 30 " ..	5.642	.188	Sept. 24 days	5.577	.232	6.960
Oct. 1-8 " ..	.836	.104	Oct. 29 days.....	4.108	.142	4.402
			Nov. 1-25.....	1.667	.067	2.010
144 days.	28.118	.195	133 days.		.175	31.931

The work this year has consisted in measuring the evaporation in our thermometer shelter and from the surface of the reservoir. The results are given. From the small evaporimeter only one reading is lacking throughout the entire summer, but for the large one 24 readings are missing. The difference is accounted for by the fact that the small one had been tested

for several months during the winter, and all its proportions and adjustments were right when it was started in May. The large one was put in actual operation as soon as completed, and various minor alterations in adjustment and proportion of parts were necessary. Toward the end of the season, its record is more continuous, and barring interference, which occurred once this summer, we see no reason why its records should not be as continuous next year as those of the smaller one.

Table VII. Showing Rainfall.

Period.	Depth in inches.	
	Total for period.	Mean daily.
May 17-31	.95	063
June	4.06	.135
July	4.65	.150
August	2.13	.069
September	2.49	.083
October 1-8	1.01	.141
October 9-31	3.37	
November 1-25	1.85	.074

Mean Annual Precipitation 26.76.

After October 8th, the small evaporimeter was frozen most of the time, so the readings were discontinued. But the large one on the reservoir, though it frequently froze a little at night, thawed out in the morning, and the readings were continuous until November 25th. The results, of course, are incomplete, but they show what vast amounts of water pass into the air by evaporation. One-fifth of an inch or .200 in one day would mean 20 barrels of 31.25 gallons each from the reservoir, or 140 barrels per acre. The average daily evaporation for the whole period of measurement was .175 of an inch, which is equivalent to 17.5 barrels per day from the reservoir throughout the entire period. The total evaporation from June to November, inclusive, was 31.931 inches, or 3,193 barrels. At the same rate for the 24 days on which readings were missed, the total evaporation from June 23rd to November 25th would be 37.693 inches, or 3,769.3 barrels from the reservoir. A table showing the rainfall during the period is also given. For all months save November, the evaporation is much in excess of the rainfall. And for the six months of measurement, the evaporation of 37.693 inches is 10.933 inches in excess of the *mean annual* rainfall of 26.76 inches.

We have had several enquiries regarding the amount of evaporation from water surfaces in Ontario, but have been unable to answer the same because the data were not to be had. We are endeavoring to solve this problem, very approximately at least, for the entire Province.

Of evaporation from land surfaces in our latitude and climate but little is known, yet it is of paramount importance to the agriculturists of this country; for of all the factors producing loss of soil moisture, evaporation is the most potent. We hope to do extensive work on this branch of the problem, and by calling attention to the vast amounts of water that a soil may lose in this way, even in one week, to impress upon the farmers more strongly than ever the prime importance of taking proper steps to conserve the soil moisture by checking evaporation.

Water for Various Crops.

Last year determinations were made on the amount of water used by crops of wheat, barley, oats and peas. The work has been continued this year, and for the purpose of comparison both seasons' results are given.

Table VIII. Showing rainfall and depth of water in inches used by crops during a dry growing season, 1905.

Crop.	Depth of rain while crop was growing.	Depth of water added.	Total depth of water used by crops.	Total depth compared with rainfall.
Wheat	10.51	12.09	22.60	2.15
Peas	12.50	14.88	27.38	2.19
Barley	7.91	10.61	18.52	2.24
Oats	7.91	13.24	21.15	2.57

Table IX. Showing rainfall and depth of water in inches used by crops during a wet growing season, 1906.

Crops.	Depth of rain while crop was growing.	Depth lost by drainage.	Depth of water added.	Net depth of water used by crops.	Total depth compared with rainfall.
Wheat	12.62	1.00	5.00	17.32	1.38
Peas	12.62	1.00	6.00	18.32	1.45
Barley	12.62	1.00	6.50	18.82	1.49
Oats	12.62	1.00	6.25	18.57	1.47

From table VIII. it will be seen that during the dry growing season of 1905 all these crops used about 2.25 times as much rain as fell. Table IX. shows, however, that during a wet season the ratio of the water used to the rain during growth is only about 1.5, as against 2.25 in a dry season. Table IX. also shows that this season some of the rain was lost by percolation. These points emphasize the advantage of proper tillage and proper drainage, both of which operations improve the soil conditions, thus enabling it the better to store and conserve the vast amounts of water necessary for the crop in a dry season, and to rid itself of the surplus in a wet one.

Treatment of Peat Soils.

The work upon this subject was a continuation of that begun last year on soil sent us by Mr. J. H. S. Cronk, Woodstock. The soil was of a very pronounced peat type, containing 84.68 per cent. vegetable matter, dry weight. It had a high water holding capacity: 100 grams of the soil in autumn field conditions lost 59.6 grams of water in drying, i.e., the soil was 59.6 per cent. water. Yet Mr. Cronk complained that during the growing season it was usually too dry.

Last year we grew oats on this soil under the following treatments:

I.—Natural soil, packed.

II.—Loam added in following proportions:

5 lbs. loam to 15 lbs. peat = 150 tons loam per acre.
10 " " 15 " " 300 " "
15 " " 15 " " 450 " "
20 " " 10 " " = 600 " "
30 " " 10 " " = 900 " "

III.—Lime added in following proportions:

1 lime to 20 peat = 29 tons per acre.
2 " 18 " = 58 " "

IV.—Sand added in following proportions:

5 sand to 20 peat = 150 tons sand per acre.
15 " 15 " = 450 " "

25 per cent. loam and 20 per cent. sand gave the best results last year and lime the poorest results, even poorer than the natural peat.

But I was not satisfied to accept the result of last year as conclusive, and kept some of the same mixtures of soil for further tests this year, also adding some others. The treatments tested this year were as follows:

Number on crock.	Treatment.	Remarks.
1	Natural peat, packed.	Same soil as used packed last year.
2	10 lbs. loam to 15 lbs. peat = 300 tons loam per acre.	One of the mixtures used last year.
3	15 lbs. loam to 15 lbs. peat = 450 tons loam per acre.	One of the mixtures used last year.
4	1 lb. lime to 20 lbs. peat = 29 tons lime per acre.	Same mixture as last year.
5	Lime added to peat at rate of 6 tons per acre.	A fresh mixture, lime standing in dry room since last year.
6	5 lbs. sand to 20 lbs. peat = 150 tons sand per acre.	Same mixture as last year.
7	15 lbs. sand to 15 lbs. peat = 450 tons per acre.	Same mixture as last year.
8	Marl added to peat at rate of 10 tons per acre.	New mixture.
9	Marl added to peat at rate of 5 tons per acre.	New mixture.

50 grains of oats were planted in each crock on May 6th. Observations were made on the germination in the various crocks on May 12th, and finally again on May 18th. The following table shows the result:

Table X. Showing Germination in Peat Soil under different treatments.

Number of crock and treatment.	Per cent. of seeds germinated by May 12, 1906.	Per cent. of seeds germinated by May 18, 1906.	Germination in 1905.
1. Natural peat	62	68	72
2. Loam, 300 tons per acre	54	62	94
3. Loam, 450 tons per acre	68	68	98
4. Lime, 29 tons per acre, old mixture	62	70	58
5. Lime, 6 tons per acre, new mixture	34	38	.....
6. Sand, 150 tons per acre	60	60	94
7. Sand, 450 tons per acre	46	54	92
8. Marl, 10 tons per acre	44	46	.....
9. Marl, 5 tons per acre	50	54	.....

Comparing the 1906 germination with that of 1905, we must conclude that the seed was not as good as last year; but there are some resemblances between the two seasons' results worth noticing: (*a*). Lime freshly added to the soil in the spring just before seeding is very injurious to germination, for both last year and this year the soil containing freshly added lime gave the porest germination of all. (*b*). This injury disappears in the second season: e.g., crock 4, an old mixture of lime gave the highest germination of all this year. (*c*). Loam has been slightly beneficial to germination in both years. (*d*). Sand aided germination last year, but did not this year.

From time to time throughout the season, the crocks were examined, that which appeared the best at the time being taken as standard and rated at 100, the others being graded by it in order of merit. The same plan was followed for the grain and straw production. These data, together with the stooling properties and average height, are given in the following table:

Table XI. Comparison of results from different treatments of Peat. ...

Number of crock and treatment.	Appearance during season.					Producing Properties.			Stooling properties.			Average height.
	May 23.	June 1.	June 15.	July 5.	July 28.	Grain.	Straw.	Total.	Seeds germinated.	Heads harvested.	Per cent. increase.	
1. Natural peat	80	90	100	78	70	49.5	90.2	79.2	34	52	52.8	29 in.
2. Loam, 300 tons per acre .	85	85	85	90	90	100.0	100.0	100.0	31	47	51.6	36 in.
3. Loam, 450 " " " .	85	88	85	95	100	86.5	88.6	87.5	34	62	82.4	32 in.
4. Lime, 29 " " " .	100	100	95	100	95	95 0	85.4	87.5	35	49	40.0	30 in.
5. Lime, 6 " " " .	60	50	50	50	50	77.4	63.4	66.7	19	24	26.2	30 in.
6. Sand, 150 " " " .	90	72	70	65	56	36.7	72.0	62.5	30	41	36.6	32 in.
7. Sand, 450 " " " .	75	65	68	65	60	59.8	86.4	79.2	27	45	66.6	31 in.
8. Marl, 10 " " " .	35	65	56	55	58	65.8	56.0	58.3	23	30	26.6	26 in.
9. Marl, 6 " " " .	25	60	60	65	60	52.9	83.2	75.0	27	36	33.3	31 in.

From this table the following facts may be gleaned: (1). Peat treated with a moderate application of loam gave the best yield in both grain and straw. (2). The old mixture of lime and peat gave the thriftiest looking plants throughout the season, but was second in yield of grain, and fourth in yield of straw, second in total yield. (3). With fresh lime, although the germination and appearance were poor, the yield of grain from it is fourth on the list. (4). The natural peat gave the second lowest yield of grain, but the second highest yield of straw. (5). Marl increased the grain production. (6). Sand does not seem especially beneficial. (7). Marl appears to act somewhat like fresh lime. (8). Lime should be added in the autumn rather than in the spring just before seeding.

Soil Analysis.

During the summer twenty samples of soil from the Rittenhouse Farm were sent us by Mr. A. B. Cutting for analysis. The results are given in the following table:

Table XII. Complete Analysis of 20 samples of soil from the Rittenhouse Farm.

Sample.	Per cent. of coarse gravel.	Per cent. of fine gravel.	Per cent. of coarse sand.	Per cent. of medium sand.	Per cent. of fine sand.	Per cent. of very fine sand.	Per cent. of silt.	Per cent. of clay.	Per cent. of organic matter.	Class.
1	.59	.088	.640	.712	.716	54.098	38.674	5.000	3.736	Loam.
2	0.00	2.023	1.812	1.431	.980	61.074	31.404	1.264	.....	Sandy loam.
3	1.64	.724	1.111	1.378	.721	50.713	36.612	8.733	4.988	Loam.
4	1.07	.600	.819	1.310	.927	21.972	53.242	21.107	.....	Clay.
5	0.00	.127	.426	.684	1.734	38.947	43.636	14.420	4.812	Loam.
6	.63	.187	.934	1.230	1.314	36.952	38.901	21.462	.....	Clay loam.
7	10.83	4.314	3.182	1.248	1.624	22.081	45.202	22.927	9.260	Clay loam.
8	6.94	1.033	1.771	.953	1.647	9.187	38.227	47.167	.....	Clay.
9	.95	.392	.741	.764	1.435	53.115	44.400	9.136	6.112	Loam.
10	3.65	5.181	3.799	2.983	4.022	18.000	43.336	22.690	.....	Clay loam.
11	10.79	5.036	2.414	2.916	9.31	9.017	38.500	38.182	8.330	Clay loam.
12	1.71	.042	.501	.447	.312	8.977	62.308	27.404	.....	Heavy clay.
13	3.39	.090	.517	.744	.984	40.852	40.656	16.148	7.916	Loam.
14	8.43	1.008	3.747	.932	.873	31.291	57.052	6.087	.....	Loam.
15	1.79	.078	.731	.862	.898	38.617	49.671	9.135	6.276	Loam.
16	.43	.036	.284	.654	1.722	32.693	49.688	14.912	.....	Loam.
17	1.20	.094	.320	.798	1.246	54.522	39.640	3.376	4.966	Loam.
18	.37	.026	.418	.424	.888	74.735	22.736	.770	.....	Sandy loam.
19	1.84	.042	.546	.410	.922	63.654	32.744	2.471	3.85	Sandy loam.
20	1.11	.038	.628	.764	1.317	57.336	38.492	1.420	.....	Sandy loam.

Odd numbers are surface soils ; even numbers are sub-soils of preceding surface soils.

Summary.

	Surface soils.	Subsoils.
Sandy loam	1	3
Loam	7	2
Clay loam	2	2
Clay	0	2
Heavy clay	0	1

A number of soils have been analyzed for Professor Reynolds also, in connection with his investigations in the growing of tobacco. The results of these analyses will no doubt appear in his report.

Aeration of Soils.

It is well known that air in the soil is essential to the growth of plants. Last year and this year we have conducted a series of experiments to ascertain whether the aeration brought about by proper tillage and drainage is sufficient for the best results in crop production. Four gallon crocks, the same as used for transpiration and experiments with peat soils, were used for this purpose. Wheat, barley, oats, peas, were used last year. This year alfalfa and soja beans were used in addition, four crocks of each. Through two of each kind air was forced once a day, effecting a complete change of air in the soil. The other two were not given any artificial aeration. Last year no marked benefit from the aeration was noticed in the wheat, barley, and oats. The peas, however, were very much benefited; and they were kept and sowed again this year. The following table gives a summary of the information regarding the wheat, barley, oats, and peas:

Table XIII. Comparing Growth of Crops in Soil Aerated Naturally and in Soil given Additional Aeration.

Number of crocks and kind of grain.	Remarks as to seed.	How treated.	Grains planted.	Grains germinated.	Plants at harvest.	Production.			
						Weight of grain in ounces.	Weight of straw in ounces.	Total crop in ounces.	Average height in inches.
10 Wheat.	Seed from field crop of 1905.	Aerated.	50	35	41	3.1	30.6	33.7	38
12 Wheat.	"	Aerated	50	33	42	8.0	32.7	40.7	38
13 Wheat.	"	Not aerated.	50	29	38	11.2	34.9	46.1	35
15 Wheat.	"	Not aerated.	50	36	41	9.2	31.6	40.7	53
16 Barley.	"	Aerated.....	50	42	45	14.3	28.2	42.5	27
18 Barley.	"	Aerated,....	50	40	45	14.8	27.7	42.5	27
19 Barley.	"	Not aerated.	50	37	46	16.9	25.6	42.5	26
21 Barley.	"	Not aerated.	50	37	43	16.9	29.0	45.9	27
22 Oats...	"	Aerated.....	50	36	52	14.2	26.6	40.8	28
24 Oats...	"	Aerated.....	50	31	44	12.4	24.8	37.2	31
25 Oats...	"	Not aerated.	50	33	45	13.8	23.4	37.2	33
27 Oats...	"	Not aerated.	50	34	47	10.4	26.8	37.2	.....
28 Peas...	"	Aerated.....	50	16	15	2.6	18.7	21.3	.....
30 Peas...	"	Aerated.....	50	13	10	4.2	17.1	21.3	.....
31 Peas...	"	Not aerated.	50	17	14	2.6	16.9	19.5	.....
33 Peas...	"	Not aerated.	50	12	9	3.1	19.9	23.0	.....
34 Peas...	Seed from aerated crock of	Aerated.....	25	16	14	8.3	23.6	31.9	.....
36 Peas...	1905.....	Aerated.....	25	15	11	7.3	19.3	26.6	.....
37 Peas...	Seed from unaerated crocks	Not aerated.	25	15	13	3.2	19.9	23.1	.....
39 Peas...	of 1905.....	Not aerated.	25	16	12	4.6	18.4	23.0	....
58 Peas...	Seed from field crop of 1905.	Aerated.....	24 plants		23	5.5	33.5	39.0	.....
60 Peas...		Aerated.....	growing		17	3.0	33.7	33.7	.....
61 Peas...		Not aerated.	in each		19	5.4	26.2	31.9	.....
63 Peas...		Not aerated.	crock.		18	2.6	18.7	21.3	.....

The same number of plants left in all crocks to test growth.

From this table it will be seen that this year the aerated wheat and barley did not seem to do quite as well as the unaerated. Last year the aerated had a slight advantage. The aerated oats yielded slightly better than the unaerated—the same as last year. The aerated peas yielded slightly better than the unaerated, but the difference was not so marked as last year. On the whole, the aeration seemed less effective this year than last, a result possibly due to the fact that the frequent rains this season produced great natural aeration in all crocks. A fact of special interest is to be found in comparing crocks 34 and 36 with 37 and 39. The former were planted with seed from last year's *aerated* crocks, the latter with seed from last year's *unaerated* crocks, and 34 and 36 gave just double the yield given by 37 and 39. Not only so: 34 and 36 gave nearly double the yield given by any other group of two. It will be interesting to follow this point for a few years to ascertain if aeration gives the grains a vitality that is transmitted from crop to crop. If this be the case, it opens up possibilities of an entirely new method of seed improvement.

The soja beans and alfalfa did not reach maturity, but the beneficial effect of increased aeration upon them was very noticeable.

Damage by Lightning in 1906.

Records of damage by lightning have been kept since 1901; in no previous year has the number of lightning strokes reported been as great. Tables Nos. XIV-XVIII give the numbers of buildings, animals, and trees struck in 1906; also summaries for the years 1901-1906.

Table XIV. Buildings Struck in 1906.

	Barns.				Other buildings.			
How Reported.	Burned	Damaged	Totals	Loss	Burned	Damaged	Totals	Loss
Personally reported.....	32	15	47	$67,049	1	17	18	$1,906
Reports from newspapers.	27	3	30	26,000 (8 barns)	1	22	23	
Totals.....	59	18	77	93,049	2	39	41	1,906

Note.—Loss reported on 55 barns $93,049
Loss on 77 barns at same rate..... $130,269
Loss reported on 18 houses..... 1,906
Loss on 41 houses at same rate..... 4,340
Total loss on buildihgs reported $134,609

Table XV. Summary of Buildings Struck from 1901-1906.

Year.	Personally reported.		Reported from all sources.			Extent of loss.		Rodded buildings.	
	Barns	Others	Barns	Others	Totals	Burned	Damaged	Burned	Damaged
1901	26	6	26	6	32	15	17	3	1
1902	34	14	39	19	58	11	47	..	3
1903	18	5	24	8	32	16	16	..	2
1904	20	5	62	19	81	54	27	..	..
1905	23	11	28	14	42	26	16	..	..
1906	47	18	77	41	118	59 barns 2 houses	18 barns 39 houses	1	1
Totals	142	53	256	107	363	183	180	4	7
	195		363			363		11	

Table. XVI. Animals Struck.

Animals	In field.	By fence.	Under tree.	In or near building	Totals. 1906	1905	1904	1903	1902	1901	Six years.
Cattle ..	30	1	33	15	79	19	32	8	22	33	193
Sheep ..	15	17	5	3	67	.....	9	1	47	7	131
Horses..	7	.....	.....	8	15	8	8	2	17	11	61
Pigs....	.....	.....	.....	8	8	.....	.....	.....	3	1	12
Totals	52	18	38	34	169	27	49	11	89	52	397

Table XVII. Summary of Trees Struck from 1901-1906.

Year.	Elm.	Pine.	Oak.	Basswood.	Maple.	Ash.	Poplar	Cedar.	Apple.	Hemlock.	Willow.	Spruce.	Beech.	Chestnut.	Balsam.	Hickory.	Butternut.	Fir.	Birch.	Walnut.	Pear.	Total.
1901.....	7	8	1	5	2	..	..	..	..	2	..	..	..	1	..	..	..	..	..	..	..	26
1902.....	6	1	5	2	4	2	1	..	..	..	1	..	1	..	1	1	..	..	..	..	..	25
1903.....	5	3	1	..	..	1	1	..	1	..	1	..	..	..	..	..	..	..	..	..	..	13
1904.....	6	4	1	..	..	1	2	..	2	..	..	..	..	..	..	..	1	..	..	..	..	17
1905.....	4	1	1	..	1	..	..	3	..	..	..	1	..	..	..	..	..	1	..	..	..	13
1906.....	7	5	6	..	3	..	2	1	5	2	3	2	..	1	2	..	..	..	2	1	1	43
Totals	35	22	15	7	10	4	6	4	8	4	5	3	1	2	3	1	1	1	2	1	1	137

It will be observed that the number of buildings struck this year is nearly one-half greater than in any other year; the number of animals more than three times as great; and the number of trees nearly twice as great.

We do not claim that these reports are complete; but we believe the information collected in these cases represents pretty well the conditions throughout the Province. If the loss on the buildings reported amounts to $135,000, as shown in note to Table No. XIV, we may conclude that complete records would show a loss for the Province of probably twice this amount, or roughly speaking, of a quarter of a million dollars. In view of this enormous loss, it is not strange that farmers are showing renewed interest in the question as to whether lightning rods are of any protective value. In Table No. XV. will be found two columns "Burned" and "Damaged" under the heading "Extent of Loss," and also the same two columns under the heading "Rodded Buildings." It will be observed that almost exactly *half* of all buildings struck were burned, the other half only damaged. But of the rodded buildings, only *one-third* were burned. This would seem to indicate that when a rodded building is struck it is less likely to be burned than an unrodded one is when it is struck, the extra safety of the rodded one being represented by the difference between ½ and 1-3, *i.e.*, 1-6 or 16 2-3 per cent. But scientists believe that the value of rods is not confined to the saving of 1-6 of the few rodded buildings struck: They believe that the rods actually prevent buildings from being struck; and the laws of electricity do certainly point to such a result, but this has not been directly established, nor yet has it been disproved. Refer to Table No. XV.: we see that 195 buildings have been "personally reported." Of these 195 we

know 11 were rodded, or 5.6 per cent. This may, I think, be fairly taken to represent the percentage of rodded barns among those struck. Now what percentage of the buildings in Ontario are rodded? Is it exactly 5.6 per cent.? If it is, then the rods neither prevent nor induce strokes. Is it only 1 per cent.? If it is, then the rods are positively dangerous. Is it 11.2 per cent.? If it is, then the rods are a great protection. Or, generally speaking, if the percentage of rodded buildings in Ontario is less than 5.6, then rods are dangerous; but if it is greater than 5.6, then the rods have a protective value. In October of this year, while travelling from Guelph to Parkhill by G.T.R., I endeavored to gain some idea of the proportion of rodded barns by counting the rodded and unrodded ones along the way. The result was most surprising to me. There were 422 barns close enough to the track for me to distinguish whether they were rodded or not; and of these 160, or 38 per cent., were rodded! But more surprising still, I saw only 3 rodded barns in a drive of ten miles north from Parkhill through a densely settled district. With such variations it was impossible to base upon these observations any argument as to the protective value of lightning rods, and efforts are now being made to arrive at a systematic estimate of the number of rodded and unrodded buildings throughout the entire Province. When we are able to state definitely whether the number of rodded barns in Ontario is less than, equal to, or greater than 5.6 per cent., we shall have established directly whether rods are dangerous, neutral, or protective.

Not only has the loss in buildings and live stock been great, but the number of persons killed or stunned has been very high, 15 killed and 17 stunned. The occupations of the 15 killed were as follows: Standing in doorway, 3; under tree, 2; working in field, 2; under hay stack, 1; under shed, 1; carrying pitchfork, 1; in cellar, 1; sitting in home, 1; leaning against barn, 1; sleeping in bed, 1; standing below chimney, 1. Some of those stunned were occupied as follows: Sitting by stove, 2; on telephone pole, 1; at telephone, 1; in yacht on lake, 3 (all in one yacht); in river, 1; feeding horses, 1; standing by windmill, 1. In the majority of cases those struck were either in or near buildings or near other elevated objects.

Several cases have been reported this year of lightning striking the same building twice; and in one case a barn was struck three times, and still escaped destruction.

Before concluding my report I would like to acknowledge the very able assistance rendered by Mr. Thom in all the foregoing work.

Respectfully submitted,

WM. H. DAY.

PART V.

THE PROFESSOR OF BOTANY.

To the President of the Ontario Agricultural College:

SIR,—I herewith submit my report of the Botanical department.

The report will be necessarily brief, as there has been a complete remanning of the work, and the organization in some respects is still incomplete.

The former instructors have scattered widely. Professor Lochhead, after eight years of faithful service, left in April to go to the new Macdonald College at Ste. Anne de Bellevue, Quebec, as Professor of Biology. For the first seven years he had charge of both Botany and Entomology, and assisted in the later years very materially in the Nature Study work not only of the Macdonald Institute, but throughout the Province at teachers' associations. By his open, generous nature, ready sympathy, sound pedagogic views and readiness to help, he was a large factor in educational advancement in Ontario along practical lines. His work in Quebec and the Maritime Provinces cannot but be for their betterment, and our best wishes go with him. Mr. V. W. Jackson, B.A., left in the Spring to assume charge of a position under the Auckland (New Zealand) Board of Education. His selection to the position reflects great credit on Mr. Jackson as well as on the College, for it was advertised in England as well as Canada. His work is directing and instructing the teachers in elementary Agriculture and Nature Study throughout the schools of the province. Mr. E. Thompstone, B.Sc., left in June to take charge of the Deputy Directorship of Agriculture for the Province of Bombay, India. He was appointed by the India Office in London, and is stationed at Poona in the Deccan.

The new staff consists of Messrs. Eastham and Howitt and myself. I assumed charge in August, but for this term have had to give most of my attention to the Nature Study class at Macdonald Institute.

Mr. J. W. Eastham, B.Sc., is a graduate of the Agricultural Department of Edinburgh University, and has had four years' experience in teaching in the Cheshire Agricultural College at Holmes Chapel.

Mr. J. E. Howitt, B.Sc., is a graduate of this College, of the year 1905, and has had a year's post-graduate work in Cornell University, Ithaca, N. Y. Both gentlemen are very well equipped for their work. Up to the present, Mr. Howitt has had charge of the general botany of the first and second years, Mr. Eastham assisting, while the Cryptogamic Botany of the third year is in Mr. Eastham's hands. Mr. Howitt has charge of the laboratory Physiology, while I take the lecture work. In Plant Pathology we have had the good services of Mr. Jarvis of the Entomological department.

There has been the usual correspondence regarding weeds, weed seeds and plant diseases. In June, during the Farmers' Excursions, the Information Bureau was in charge of Mr. Thompstone and Mr. Baker.

There are no special needs to mention that have not been previously brought to your notice. We expect to get more microscopes and teaching charts next year, and look forward too to having a greenhouse added to our equipment for Plant Physiology. It would seem that the day is not far distant when the laboratories will have to be enlarged.

Respectfully submitted,

S. B. McCREADY.

PART VI.

THE PROFESSOR OF ENTOMOLOGY AND ZOOLOGY.

To the President of the Ontario Agricultural College.

SIR,—I have the honor to present my first report for the Department of Entomology and Zoology. As my appointment to the Professorship, rendered vacant by the resignation of Professor Sherman, dated from the first of June last, I have only the proceedings of the last six months to report upon. During the summer months my time was fully occupied with field observations, the collection of specimens for the cabinets and for study, and a somewhat voluminous correspondence.

In June there were many visitors during the Farmers' Excursions who brought specimens for identification and who desired information regarding the best methods of dealing with various noxious insects. In July I spent several mornings and many afternoons with the Nature Study Class of Ontario teachers at the Macdonald Institute, assisting them in naming and classifying their collections of insects and directing some out-door observations. During August and at the beginning of September a good deal of time was taken up in preparation for the removal of the library and collections of the Entomological Society of Ontario from London to Guelph, and their subsequent re-arrangement in the College library and museum here. On the 17th of September the regular work of the term began and the prescribed course of lectures has since been fully carried out.

COURSE OF INSTRUCTION.

From information supplied by my colleague, Mr. Tennyson D. Jarvis, B.S.A., I am enabled to give a complete account of the educational work that has been done in this Department during the whole year, the instruction during the winter term having been given by Prof. Sherman and Mr. Jarvis, and in the current term by Mr. Jarvis and myself.

1. *Elementary Zoology.*—First year, winter term, two periods of lectures and one of laboratory work each week, covering the chief divisions of the animal kingdom and their principal characteristics, special attention being given to the species common in this country and those of economic importance as regards agriculture and horticulture.

2. *Economic Entomology.*—Second year, fall term, two periods of lectures and one afternoon of laboratory work each week. This course has afforded instruction in the external anatomy and structure of insects, their metamorphoses and life-histories, and an outline of their classification. Special attention has been given to those affecting farm, garden and orchard crops, and those of a beneficial character, and to insecticides and other methods of dealing with noxious species. From time to time the lectures have been illustrated with lantern pictures, enabling the whole of a large class of students to see details of form, structure, ornamentation, etc., which could not otherwise be conveniently brought before them. During several weeks at the beginning of term an afternoon was spent in field excursions for collecting specimens and making observations, but when the weather became too inclement for out-door work of this kind the time was devoted to laboratory work.

3. *Systematic and Economic Entomology.*—Third year, both winter and fall terms, two periods of lectures and one afternoon of laboratory work each week. This may be regarded as the most important course in entomology during a student's College career. A systematic series of lectures is begun in September and carried through both terms. The division of the class of insects into orders is first treated of and their characteristics described. Each order is then dealt with in turn, and the general classification into super-families, families and tribes is carefully taught; the more important genera and species are taken up in detail and much attention is paid to the life-histories of common forms and those of economic importance. During the term now drawing to a close the orders Orthoptera, Hymenoptera, Coleoptera and Lepidoptera have been particularly studied; the remaining orders will be taken up after the Christmas vacation and more careful study will be made of structure and other details of families which have not been fully discussed already. The lectures are illustrated with diagrams and specimens, and occasionally by a series of lantern pictures of the more important insects belonging to the order under consideration. It is expected that by the end of the College year the students in this class will have acquired a sufficient knowledge of general entomology to be able to know at sight to what order and family any common insect belongs, whether it is noxious, beneficial or harmless, and, if of a destructive character, how best to deal with it. A knowledge of this kind cannot fail to be of immense benefit to all who intend to devote themselves to horticulture or agriculture in any of their branches. Some members of the class, whose tastes lead them to take a keener interest in biological pursuits, will be encouraged to form collections for themselves and study more in detail and in a scientific manner the specimens that they are able to obtain. They will thus be prepared in their fourth year to specialize in Biology or Horticulture with the advantage of a good foundation in, at any rate, the Entomological portion of their studies. The laboratory work in the afternoons, since the field excursions had to be abandoned for the season, has been devoted to the examination and study of specimens in order to learn their characteristics from actual examples and thus be enabled to place them in the order and family to which they belong, and become familiar with their general aspect.

4. *General Entomology.*—Fourth year, both winter and fall terms, six hours of laboratory work per week. This course is for those students who take the Biological or Horticultural options in the College curriculum. The work is of a much more advanced character than that of the preceding years, and includes careful field observations as long as the weather permits, studying life-histories, making collections in special departments and doing systematic work in the determination of specimens. Under the supervision of Mr. Jarvis, microscopic work is carried out in the study of gall-insects, scales, and the minute forms of great economic importance. Some valuable original observations have been made in the field and garden by students in this year which have been deemed worthy of publication in scientific periodicals or bulletins.

5. *Systematic and Economic Zoology.*—Fourth year, one afternoon each week in laboratory work during the fall term and two afternoons in the winter term.

The fourth year specialists in Biology receive lectures in laboratory and field work. In the laboratory representative species are examined with special reference to parts employed in classification. In the lectures are discussed the principles of classification and the characters and relationships

of groups, and the habits and life histories of the economic species. In the field are studied the appearance and habits of the economic forms of animal life.

6. *Vertebrate Histology.*—In this course the students specializing in Biology receive lectures and demonstrations on the gross anatomy and the microscopic structure of the vertebrates. Especial attention is given to the methods of staining, imbedding and sectioning animal tissues. The material equipment consists of microscopes, camera lucidas, microtomes, photo-micrographic camera and the projection microscope which is available for class demonstrations.

7. *Insect Histology.*—This course accompanies the course on vertebrate histology. Lectures and demonstrations are given on the anatomy and histology of the insect. Especial attention is given to the study of the mouth parts and the respiratory system.

8. *Physiology.*—The fourth year specialists in Biology receive lectures and demonstrations on elementary and experimental physiology of the human body.

9. *Nature Study.*—The class of Nature Study students from the Macdonald Institute, consisting of teachers from the eastern Provinces of the Dominion, has come to me for one afternoon in each week during the fall term. A series of lectures has been given to them on the outlines of Entomology, discussing the general classification and that of the more important orders of insects. Special attention has been given to common species that are of economic importance or of particular interest from their remarkable life-histories, and to those that are to be met with almost everywhere and thus attract the notice of school children and the casual observer. The lectures have been illustrated with numbers of specimens and occasionally with lantern views. The members of the class are keenly interested in their work, and it has been a pleasure to assist them in the acquisition of a knowledge of some portion of this wide field of nature study.

10. In addition to the foregoing, I gave, in Massey Hall, a lecture illustrated with lantern pictures on "Some Injurious Insects" to the Associations of Oxford and Bruce teachers who met here on the 31st of May and 1st of June. On the 30th of August a paper prepared by Mr. Jarvis on "Greenhouse Pests" was presented by me at the meeting of the Florists' Association of Canada. On the 12th of September we both took part in judging the Natural History exhibits at the Guelph Central Fair and in examining orally the children who were competitors for prizes. On the 21st of November I gave an address to the Farmers' Institute lecturers on some of the most important injurious insects.

On the 4th of June Mr. Jarvis gave two lectures in Toronto to the Farmers' Institute Lecturers on "Insects injurious to Staple Crops and Garden Crops," and on "Fungus Diseases affecting Cereal Crops"; and on the evening of the same day an illustrated lantern lecture to the boys of the Broadview Institute on Life-histories and Habits of Insects.

Correspondence.

There have been constant enquiries all through the season and even up to the present time, respecting a variety of injurious insects and the best methods of dealing with them. Letters asking for information have come from all parts of the Province of Ontario and some from such distant localities as British Columbia and Nova Scotia. These all received careful atten-

tion and were fully replied to; in some cases, where obscure forms or little-known insects were sent for information, it was necessary to devote to them a good deal of time and attention as well as research.

The following are some of the insects about which enquiries were made and which attracted notice from their ravages and widespread abundance.

The Oyster-shell Bark-louse (*Mytilaspis pomorum*) is now generally distributed on apple and other trees throughout the Province, especially in old and neglected orchards. Specimens have been sent for identification from many parts of the country ranging from Georgian Bay to Lake Erie and from the County of Durham to the River St. Clair. It is to be found, no doubt, in every county, if not township, of the Province. While it does not multiply and spread with the rapidity of the San Jose scale and is therefore not so destructive, it is nevertheless a serious injury to the trees, where it is allowed to encrust the limbs and twigs, and should by no means be neglected. The lime and sulphur wash has been found most effective.

The Rose-beetle, or Rose-chafer (*Macrodactylus subspinosus*) appeared in great numbers this year in various localities where it had not been observed before. Specimens were sent from the outskirts of Toronto, which seems to be its present eastern limit, and from places here and there as far as the County of Essex. It has been abundant at London for some years past, but does not appear to extend much farther north. As the larva lives upon the roots of grasses on sandy land, the most effective remedy is to break up old pastures where the beetle occurs, especially as the ordinary insecticides have little or no effect upon the adult insect.

White-grubs, the larvæ of May-beetles or "June-bugs" (*Lachnosterna*) have been very destructive to lawns and boulevards in cities and towns, and to the turf of golf-links and bowling-greens. In some cases the grubs have eaten away the roots of the grass to such an extent that the sod could be rolled up like a carpet. Complaints were also made of injury to strawberry plants by the grubs devouring the roots.

Specimens of the Spruce Gall Mite (*Chermes abietis*) have been sent in from Milton, Galt, Chatham and Shelburne. It is also to be found in abundance on some spruce trees in the College campus, and is widespread throughout the Province, causing no little anxiety to nurserymen and owners of ornamental shrubbery. We hope to carry out a series of observations and experiments with it during the coming year.

The White-marked Tussock Moth (*Orgyia leucostigma*) has been abundant as usual in Toronto and some other cities and several enquiries have been made respecting it. Where the conspicuous egg-masses have been regularly removed from the trees in the winter time, the insect is easily kept within due bounds and does no appreciable injury to the shade or fruit trees that it affects.

The Cottony Maple-scale (*Pulvinaria innumerabilis*) is another shade-tree insect that has been alarmingly abundant on Maples, Bass-wood and other trees in the streets of London and several other places. After a series of years during which its attacks have been more and more severe, the insect is now, happily, on the wane, owing, no doubt, to the increase of its parasitic enemies. This year it has been far less numerous than for many years past and will probably not give much trouble for some time to come. The scale was to be found on some trees in the woods here, but nearly all that were examined were killed by parasites and only a very small percentage remained alive.

Enquiries respecting the San Jose scale (*Aspidiotus perniciosus*) were made from some of the affected districts, and information was given regarding the lime-sulphur method of treatment.

Galls on Maple and other trees were sent in from several quarters. Mr. Jarvis has been for some time making a special study of these interesting growths and the insects that cause them. The results will shortly be published in an accessible form.

The Mediterranean Flour-moth (*Ephestia Kuhniella*) has given a great deal of trouble and caused much anxiety to the owners of an infested building at Lambton Mills. Energetic measures have been taken to get rid of the pest with satisfactory results.

The Buffalo Carpet-beetle (*Anthrenus scrophulariæ*) has been sent in for identification and information by housekeepers in many places, showing that it is now to be found all over the Province and has to be reckoned with amongst the domestic plagues that require constant vigilance.

The Asparagus beetles (*Crioceris asparagi* and *12-punctatus*) are gradually spreading in a north-west and westerly direction from the Niagara River, where they crossed into Canada, and are now to be found in injurious numbers as far as Guelph and London. The former species, called the Blue Asparagus beetle, has not advanced so rapidly as the spotted form, but both are now numerous in the College garden and elsewhere, the larvæ of the one feeding upon the foliage and of the other on the seeds of the plants. Both species may be found attacking the shoots when the vegetable is being cut for table use.

Aphis, or Plant-lice, affecting Cabbage, Turnip, Fruit-trees, Honeysuckle and other ornamental plants, have been frequent objects of enquiry throughout the season, also the Onion and Turnip maggots, Cut-worms, Cucumber-beetles, Wire-worms, the Tarnished and Four-lined Leaf-bugs and many other insects troublesome to gardens.

The Clover-seed Midge (*Cecidomyia leguminicola*) has been troublesome at Simcoe, and the Bean-weevil (*Bruchus obtectus*) at Aurora. The Pea-weevil (*Bruchus pisorum*) is not nearly so abundant as in former years but should not on that account be neglected. These two "weevils" can be controlled without much difficulty by fumigating with bi-sulphide of carbon.

Many other insects of lesser note, or rather of less widespread notoriety, have been sent in on account of their injuries to green-house plants, fruit-trees, vegetables and flowers, etc. Some account of these and of the remedies recommended in the case of the insects mentioned here will be given in the forthcoming Annual Report of the Entomological Society of Ontario.

Some correspondence has also been carried on with leading Entomologists in the United States regarding the introduction of parasites to keep in check the ravages of the Codling worm. Any definite results obtained will be reported upon in due course.

In addition to the correspondence on injurious insects, a considerable amount of time has been occupied with the identification of collections of insects. No less than twenty-two cases or boxes of specimens were named during September for school children in Guelph and the neighbourhood and some more distant places. Many specimens of a more interesting scientific character were also studied and reported upon for Entomological students in other places. We are always pleased to be of assistance in this way to anyone interested in Entomology.

Demonstrations.

A number of demonstrations were given by the department at fall fairs and Fruit and Flower shows in the cities and towns, which if systematically persisted in cannot fail, we feel sure, to give some much-needed assistance to the farmer and fruit-grower along the lines of economic biology.

At each place attended an information bureau was installed and the most important phases of biology, from an economic standpoint, were illustrated by an exhibition. Specimens and series illustrating the life-histories of many of our common injurious insects, as San Jose scale, Spruce Gall-louse, Wireworms, June beetles, Codling moth, Tussock moth, Plum curculio, Buffalo tree-hopper, Pear tree slug, and many others, were shown in patent Ricker mounts so that they could be safely handled and examined. In the same way our more important diseases of farm and garden crops as the smuts of corn, wheat, oats and barley, wheat rust, potato blight, shot-hole fungus of plum, anthracnose of bean, black knot of cherry and plum, apple canker, black rot of grapes, plum pockets, apple and pear scab, and many other common fungous diseases were exhibited.

Insecticides and fungicides made up in small quantities were also shown and instructions for their manufacture and use given to all interested. Apparatus for the fumigation of nursery stock was also shown and its use explained.

In the line of Nature Study demonstrations were given in the collecting, mounting and preservation of insects and in the preservation of other zoological specimens as frogs, snakes, birds, etc., and examples of the preservation of these shown.

Demonstrations in the setting up and preservation of aquaria were also given and several aquaria containing living specimens exhibited.

At all of these exhibitions efforts were made to assist farmers and others to whom the information would be of value by an interesting and attractive exhibition and by giving all possible assistance to interested parties. By this method it is hoped that the farmer may be induced to take a deeper interest in one of the most important phases of Agriculture—Economic Entomology.

The demonstrations were given by Mr. Jarvis at the following places:

Aug. 26th to Sept. 10th. Natural History Building, Toronto Exhibition, Toronto.

Sept. 11th-13th. Central Exhibition at Guelph.

Sept. 14th-15th. Fruit, Flower and Vegetable Show at St. Catharines.

Nov. 6-10th. Fruit, Flower and Vegetable and Honey Show, Massey Hall, Toronto.

Dec. 10th-14th. Winter Fair, Guelph.

Publications.

In addition to editing the "Canadian Entomologist" and the Annual Report of the Entomological Society to the Legislature of Ontario, I have contributed the following articles:

"Ravages of the Rose-beetle," Toronto Globe, July 21st.

"The Fall Web-worm," Guelph Herald, September.

"Fall Work against Insects," a Press Bulletin which has been published in agricultural journals and newspapers all over Ontario and in some other parts of the Dominion.

"The Codling-worm," Canadian Horticulturist, December.

"Injurious Insects of the Year," Annual Report of the Entomological Society of Ontario for 1906.

Mr. Jarvis has made the following contributions during the year:

Reports of the meetings of the Guelph Branch of the Entomological Society of Ontario.—Canadian Entomologist, February, March and April.

"Mites infesting Farm Homesteads."—Can. Entomologist, July.

"The Oyster-shell Bark-louse."—Can. Entomologist, September.

"The Locust Mite."—Can. Entomologist, October.

"The Stomach Contents of the Wood Frog."—Ontario Natural Science Bulletin.

"A Preliminary List of the Gall Insects of Ontario," and "Investigations of Clover Fertilization."—Report of the Entomological Society of Ontario for 1906.

"Wheat Rust."—Toronto Weekly Sun, June 28.

Various minor articles for the "Farmers' Advocate," London; the "Canadian Horticulturist," Toronto, and the "Western Farmers' Advocate," Winnipeg.

Joint authorship with Prof. Lochhead of O. A. College Bulletin, No. 150.

"The Common Fungus and Insect Pests of growing Vegetable Crops," published by the Department of Agriculture, July, 1906.

Field Experiments.

The following are the results of the Field Experiments carried out under the supervision of Mr. Jarvis. While largely negative in character, they are of value as shewing what suggested remedies are of little or no use. The experiments have only been conducted during one season; it is intended that they shall be continued and others attempted when the proper time comes.

The Oyster-shell Bark-louse.

Owing to the large number of applicants who were desirous of obtaining information on the best methods of combating the Oyster-shell Bark-louse, it was decided to carry on a number of experiments here, to test the efficiency of the various insecticides commonly used againt scale insects.

Of all the spray mixtures tried, the well-known lime, salt and sulphur wash gave the best results.

The lime, sulphur and caustic soda, and the lime, sulphur and sal soda were also tried, but without quite such good results. The lime, sulphur and caustic soda proved to be a little superior to the lime, sulphur and sal soda, owing to its apparent power of better penetration.

Soaps.—Various soaps were also tried, and of these the Whale-oil Soap Emulsion gave the best results, many of the scales being killed.

The Whale-oil Soap gave good results also, but not equal to the Emulsion.

Sunlight and Lifebuoy soaps, and also a mixture of both, proved to be of very little value, inasmuch as they did not prevent the eggs from hatching. These soaps are claimed by the makers to be most effective against the San José and other scale insects, but applied as a winter wash against the Bark-louse they have little value. Undoubtedly they should be applied

after the young lice hatch, and not as a winter application, and then would most likely prove effective against the tender lice.

Kerosene Emulsion.—Kerosene Emulsion was also tried, and this proved of more value than the Whale-oil Soap Emulsion, but not so effective as the lime, salt and sulphur wash.

Lime.—Quick slaked lime, 1½ lbs. to 1 gallon of water, proved very effective applied as a winter wash, and equalled the results obtained by the lime, salt and sulphur.

Kerosene-Lime.—This was also tried, but did not prove superior to the Kerosene Emulsion, and therefore is not to be preferred to it.

Root Maggot Experiments.

It is well known that throughout the Province of Ontario, enormous loss is occasioned to the vegetable gardeners and others from the destructive ravages of root maggots.

These insects attack in particular radishes and cabbages, also onions. In the case of radishes they tunnel through them, thus making them unfit for sale, and in the case of the cabbage they burrow beneath the ground, attacking the root and causing the plant to die.

The maggots which are found attacking cabbages, radishes, cauliflower, turnips and those in onions, and in beans and corn, are very similar, but they belong to three different species, Phorbia brassicae, attacking plants of the cabbage family; Phorbia ceparum, infesting onions, and Phorbia fusciceps, injuring beans and corn.

Up to the present time it cannot be claimed that any thoroughly efficient remedy has been discovered. Numerous remedies have from time to time been suggested, and therefore the following series of experiments was carried out to determine the best and cheapest means of eradicating this pest:—

I. Carbolic Acid Emulsion.

The emulsion was made as follows:—Hard soap, 1 lb., or soft soap, 1 quart; boiling water, 1 gallon; crude carbolic acid, 1 pint.

This stock solution was diluted with 50 parts of water and then sprayed upon rows of radishes that were just nicely above the ground. The results were as follows:—Radishes sprayed, 225; radishes free from maggots, 75; radishes infested with maggots, 150.

This is one of the best remedies for the radish maggot, but should be applied at frequent intervals throughout the growing season.

II. Pyrethrum and Flour.

This application was applied dry. Pyrethrum or insect powder was mixed with four times its weight of flour, and then kept in a tightly closed tin for twenty-four hours. After this time had expired it was taken and shaken lightly over the radishes.

The results were as follows:—Radishes treated, 286; radishes free from maggot, 197; radishes infested with maggot, 89.

It will be seen that this remedy gave excellent results.

III. Hellebore.

White Hellebore was applied as a dry application and in an undiluted state.

The results obtained were as follows:—Radishes treated, 185; radishes free from maggots, 55; radishes infested with maggots, 130.

IV. Tobacco Water.

Refuse tobacco, 2 lbs; water, 5 gallons.

This mixture was boiled for 30 minutes or more, and, when cool, was sprayed on the plants undiluted.

V. Carbon Bisulphide.

About a teaspoonful of carbon bisulphide was taken and poured into a hole made a short distance from the root of the plant. The hole was then covered with earth.

The results were as follows:—Radishes treated, 63; radishes not infested, 42; radishes infested, 21.

VI. Nitrate of Soda.

Nitrate of soda was also tried, the idea being that it would stimulate rapid growth and thus enable the plant to resist the ravages of the maggot, to a large extent, on account of its stronger constitution.

The results, which were unsatisfactory, were as follows:—Radishes treated, 165; radishes not infested, 40; radishes infested, 125.

VII. Acid Phosphate.

The idea of this experiment was to determine whether the acid nature of the phosphate would have any effect upon the root maggot, rather than stimulating the growth of the plant.

A dressing of one ounce to the square yard was applied. The results were as follows:—Radishes treated, 197; radishes not infested, 75; radishes infested, 122.

It will thus be seen that the application of acid phosphate as well as that of nitrate of soda, is not of great value. However, the yield of radishes was undoubtedly increased to some extent, and at the same time some benefit resulted.

In conclusion it appears most advisable to employ Pyrethrum powder mixed with flour and dusted on dry, or else the carbolic emulsion. Carbon bisulphide also gives good results, but unless carefully applied, there is a danger of killing the plant, because of the effect of carbon bisulphide in excess upon the roots.

Any application used should be repeated about once a week.

Spraying with Crude Petroleum and with Emulsions of Crude Petroleum and Water.

Owing to the great value of crude petroleum as an insecticide, when applied in a diluted state, the following experiments were carried out, in order to determine the burning effect of crude petroleum, and of emulsions of crude petroleum and water on the foliage when applied at different strengths on different species of fruit trees.

The following species of trees were selected:—Apple, pear, plum, peach, cherry and currant. Crude petroleum undiluted was applied to each of these trees, and also emulsions of crude petroleum and water were applied at the following strengths:—1. Crude petroleum, 100%; 2, 50%; 3, 35%; 4, 25%; 5, 15%.

It will thus be seen that a fair test was allowed each tree, the strength varying from 15% to 100% and thus a fair estimate has been attained, showing what strength of crude petroleum is safe to use on the different trees mentioned. The stronger the strength at which crude petroleum is applied, the more certainty there will be of thoroughly ridding the tree of scale insects, but on the other hand if too strong a percentage be applied and the foliage of the tree severely burned and growth injured, then we defeat our object.

We may rid the tree of all scale, but we may also cause its death in so doing.

This series of experiments then was undertaken to find the safest strength at which to apply it, and to compare the effect on different trees.

Experiments on Apple.

100%.—This application was made early in the spring when the tree was in leaf. The spray killed all the foliage, and at the time apparently destroyed the tree. Later on, however, it regained its normal condition, and clusters of dwarfed but vigorous leaves were produced. No fruit was borne.

50%.—This application was made a little later in the season. In this case the branch appears to be quite dead, the wood being dry and brittle. No fruit was borne.

35%.—Leaves, buds and fruit all destroyed, and wood very badly blistered, but still green and living beneath the outer bark. No fruit borne.

25%.—Leaves all killed and wood somewhat burned. Growth appears prevented more or less. No fruit borne.

15%.—Wood not burned, but leaves nearly all killed. Tree broke into leaf later on. No fruit, however, was borne.

Experiments on Pear.

100%.—All green growth was killed, and no fruit was borne. The wood also was badly blistered. Altogether the results were most unfavourable.

50%.—The leaves were all killed and no fruit was borne. At a later date the tree made somewhat of a recovery, growth being restored, and fresh leaves opening. This application is, however, altogether too strong for pear trees.

35%.—In this case also nearly all the buds and leaves were destroyed, and a large percentage of the fruit borne. Growth was not injured to such an extent as in the previous applications.

25%.—Most of the leaves were killed, but the buds were uninjured and produced healthy and vigorous leaves. No fruit was borne.

15%.—This application resulted in about half the leaves being injured. The buds were not destroyed and development and growth was little interfered with. No fruit was borne.

Experiments on Plum.

100%.—In the case of plum there appeared to be very little difference between the effects produced by the application of crude petroleum, in strengths of 100%, 50% and 35%. The main difference noticed was that the weaker solutions took longer to do their work. All, however, killed leaves, and buds; no fruit was borne. Growth and development was also prevented.

25%.—This gave much better results. The leaves, however, were burned and partially destroyed in many cases, but they were nearly as numerous as on an unsprayed tree. Development and growth were apparently but little checked. No fruit was borne however.

15%.—This application gave about the best results. Little damage was done, few leaves being burned and growth apparently being little interfered with. Fruit of good quality was also borne, but rather small in size.

Experiments on Cherry.

100 and 50%.—Here again as in case of the plum we find but little if any difference in the results obtained from the application of 100% and

50%. In both cases the leaves, buds and branches were all killed, growth checked, and the branch rendered useless and dead.

35%.—In this case also, the leaves and buds were completely burned, and no fruit was borne. The results differed only from those given above, inasmuch that the injury to the bark was not as severe and complete as in 100% and 50% applications.

25%.—The branch developed leaves, though it only bore about half the number that unsprayed trees did; the buds, however, were not much injured, and some of the leaves were slightly burned around the edges. Only one cherry was borne and this was small and shrivelled.

15%.—Growth in this case was normal, and but little checked. The leaves were only slightly burned. The branch bore fruit, although of an inferior quality. The fact that the fruit was poor is due possibly to a too thorough application of the emulsion.

Black Currant Experiments.

100% and 50%.—Between the results obtained from these two applications there appears to be but little difference. In both cases leaves, buds and wood were completely killed, and no fruit at all was borne.

35%.—In this case also all the leaves that were reached by the spray were burned, mostly, however, only around the edges. Growth was not altogether checked and the branch bore fruit, though of an inferior quality, and few in number. The wood did not appear to be affected.

25%.—About 60% of the leaves were burned, though not to such an extent as in the case of the 35% application. The buds were little injured if at all, and new leaves were developing from the terminals. Fruit borne was rather poor and longer in maturing than in the case of that unsprayed.

15%.—Few leaves burned and growth not much affected. Development of fruit and leaves not much interfered with.

Conclusions.

As a result of these experiments it is clearly shown that crude petroleum and even emulsions of crude petroleum and water, applied diluted to 15% are not suitable as a summer wash for fruit trees. In all cases the 100% 50% and 35% proved disastrous and generally resulted in the killing of the tree.

Applied in the winter, it is fully as effective against scale insects as kerosene, and is harmless to the most tender varieties.

Equipment.

The scientific equipment of this department has been greatly improved during the current year by means of the grant placed at our disposal for this purpose. An elaborate and excellent projection apparatus has been purchased for the illustration of lectures. It is of the latest and most improved design, and is so arranged that a change can be instantaneously made from the exhibition of ordinary lantern slides to those employed in the microscope. We are thus enabled to bring before our classes minute details of structure as well as objects of great beauty and interest in a manner which could not hitherto be done.

We have also procured a new apparatus for micro-photography with a special microscope for use with the camera. This will be of great value in making photographic records of living insects and their work, of zoologic dissections and of microscopical preparations.

The collections of the Department have been largely increased in value by the purchase, through the liberality of the Department of Agriculture, of Mr. A. H. Kilman's extensive collection of North American Coleoptera and other insects. The Coleoptera are being re-arranged and form a reference collection of great service which is being constantly made use of. During the season many specimens have been added to our general collections and large numbers of some common species have been procured for laboratory purposes.

Among the additions to the Museum may be mentioned a fine specimen of the Canada Lynx, which was shot in the County of Middlesex, and a pair of Turkey Buzzards from the same district; also a Blue Heron obtained near Guelph.

Messrs. Holt, Renfrew & Co. of Quebec and Toronto have presented a collection of about sixty specimens of furs from various parts of the world which are used in the manufacture of fur garments, caps, etc.

An interesting exhibit of Jamaican animal and vegetable curiosities has been kindly lent to the Museum by Mr. T. D. Jarvis.

There are many deficiencies in the collections which it would be desirable to fill up; we especially need more specimens of the mammals of Ontario, and also of birds, fishes, reptiles, etc., in order to complete the series and make the Museum more useful in an educational point of view, as well as more attractive to visitors. Much might be done in this respect by the co-operation of the students in their vacations and by those who have completed their College course and are now scattered over the Province.

We rejoice to see that the "Insectary Building" is now under construction and will be ready for occupation next term. It is too late in the season to procure much material for experimental work this winter, but with the opening of spring and the revival of animal and vegetable life there will be plenty of objects for study. We look forward to being able to largely increase the usefulness of this Department by having so convenient a place for working out life histories of injurious and other insects, and conducting experiments in parasitism and artificial methods of repression.

Entomological Society of Ontario.

An event of more than ordinary interest and of much importance to the College was the removal in September of the headquarters of the Entomological Society of Ontario from London to Guelph. For some time past it has been the opinion of the Ontario Department of Agriculture and the authorities of the College that the usefulness of the Society would be very much increased, and at the same time it would be of great benefit to the students, if the library and collections could be rendered available to them. This has now been satisfactorily brought about by the action of the Council of the Society, who recently decided in favor of the removal by a large majority. The packing and transportation were successfully accomplished by the end of August and early in September the cabinets and other collections of insects were arranged in a portion of the southern room of the Museum which has been set apart for the purpose; they are under the supervision of Mr. J. E. Howitt, the Society's Curator. Mr. Jarvis and I have frequently made use of some of these collections in illustration of our lectures, while the reference cabinets have been frequently consulted for the identification of specimens by students and others as well as ourselves.

The books and periodicals are arranged in a series of stacks set apart for them in the lower flat of the College Library, and have been placed in my charge. They have all been arranged systematically on the shelves, with the exception of some of the numerous Bulletins and foreign magazines which are received in exchange for the "Canadian Entomologist." These are being gradually sorted out as time permits, and I hope will soon be in good order and available for reference. This large addition to the scientific department of the Library is a very valuable one, especially to advanced workers in Entomology; many of the books are very rare and expensive, and the series of journals of Entomological and other scientific societies it would be difficult to duplicate. A certain amount of use is being made of these volumes, but they can hardly be properly available till there is a complete card catalogue for consultation in the Library Reading-room, similar to those in use for the books belonging to the College. It will immensely increase the value of this Library to the students, consisting as it does of nearly 2,000 bound volumes and a very large number of unbound publications, if such a catalogue can be made.

The location of the Society's headquarters in our midst has caused the Guelph Branch, which was formed last year, to be merged in the parent Society, and meetings of the Society are now held fortnightly in the Biological Building, and are well attended by many students of the College, and the Nature Study class from the Macdonald Institute, as well as by the members. At the annual meeting held here in October, Mr. Jarvis was elected vice-president and acts as chairman at all ordinary meetings. The members of the Wellington Field Naturalists' Club heartily co-operate with the Entomologists and joint meetings are sometimes held; on all occasions the members of each Society are welcome visitors at the other's meetings.

The annual meetings of the Entomological Society, which bring together the leading Entomologists of the Dominion and usually some eminent worker from the United States, will always, as a rule, be held here. They must prove, as those held at the College in both 1905 and 1906 assuredly did, an inspiration to the students and an incentive to increased interest and exertion in this great field of biological research. It may be mentioned that the active officers of the Society, apart from the Directors, who are resident in their respective districts, are members of the College staff, viz.: Mr. T. D. Jarvis, Vice-President; Mr. E. J. Zavitz, Secretary; Prof. McCready, Treasurer; Prof. Bethune, Librarian and Editor of the "Canadian Entomologist."

Before concluding this report, I wish to speak in the highest terms of the ability and industry of my colleague, Mr. Tennyson D. Jarvis. He is indefatigable in work and does excellent service in outdoor experiments and observations, in clear and instructive lectures in the class-room, and in the varied duties that devolve upon him in the laboratory with the advanced students. His ready assistance and cordial co-operation have smoothed away difficulties that might have proved troublesome in carrying out the new duties pertaining to my first term as Professor of Entomology and Zoology.

Respectfully submitted,

CHARLES J. S. BETHUNE.

PART VII.

THE PROFESSOR OF CHEMISTRY.

To the President of the Ontario Agricultural College:

Sir,—I have the honor to submit herewith my sixth annual report of work done in the Department of Chemistry.

The work of the department very naturally falls into three divisions: First, Teaching; second, Miscellaneous work, and third, Investigation work.

Teaching.

This is naturally the most important part of our work. As the chemistry of the common things around us is better understood, we see that a knowledge of this subject forms a very important part of the foundation work of nearly every subject on the College curriculum. It is essential to the understanding of the work in Animal Husbandry, Agronomy, Dairying, Horticulture, Botany, Physics, and Home Economics; for, whether we are interested in foods, or the feeding of plants and animals, or in the cultivation of the soil, or the handling of milk, or the many problems of the home, a knowledge of chemistry is essential if we are to secure the best results. Not only is it essential, but it gives an added interest to all the operations of the farm and home, because it is possible, through a better understanding of the subjects, to work more intelligently. Thus it is that the results of chemical research and science in general are gradually solving the many problems of practical agriculture, and that rule of thumb work is being replaced by methods based on scientific facts. It is these scientific facts, many of which are of inestimable value in agriculture, that we seek to bring before the students in such a manner that they may see their practical application. Naturally such teaching requires an intimate knowledge of the results of the latest research work, and entails more than the ordinary amount of continuous preparation on the part of the instructors. I am very glad to report that the interest shown by the students of the different years in their various studies has been very satisfying.

The only radical change in the teaching work of my department is that, at your request, we now give instruction in Geology. In former years it was taught in the Biological Department; but, after Prof. Lochhead's resignation and the rearrangement of the work formerly under his charge, it was thought that the teaching of Geology and its relation to agriculture might very profitably be taken up in connection with the chemistry of soils, fertilizers, etc. Consequently, commencing with this term, the instruction in Geology has been given in the Chemical Department. The teaching of the subject has been assigned to Mr. Gamble, Lecturer in Chemistry, who is well prepared in the subject, and quite capable of handling it in a thoroughly practical manner.

On the first of October Mr. E. G. de Coriolis, B.S.A., Demonstrator in Chemistry, severed his connection with the department to accept a lucrative position with the Cuba Railway Co. In Mr. de Coriolis I lost an able instructor, a careful analyst, and an agreeable co-worker. Mr. H. L. Fulmer, B.S.A., Fellow in Chemistry, was promoted to the position of Demonstrator

and Mr. G. G. White, B.S.A., was appointed Fellow. These changes have made necessary a slight rearrangement of the work of the laboratory. Both men are doing efficient work in their respective positions.

Miscellaneous Work.

Apparently every year there is an increase in what might be called College extension work. I refer to the correspondence, addressing of Farmers' Institute meetings, conventions of various kinds, and the answering of questions and contributing articles to the different agricultural papers. This is a very important part of our work, for it serves as a means of keeping us in touch with the every day practical problems of the farm.

Miscellaneous Analyses.

A large number of miscellaneous samples of substances of various descriptions have been examined during the year. We cannot always make the analyses required, partly because of the amount of work entailed and partly because the samples forwarded do not accurately represent the substances of which they are a part. We also strive to keep away from what may be termed commercial work, and devote our time to the examination of substances which deepen our knowledge of the common materials useful on the farm,—as manures, foods, etc.,—and to aid the farmer in arriving at a true idea of their value. Many of these analyses are not of sufficient value to report here, although the results obtained are frequently of great value to us in answering the questions of correspondents. Reference will be made to one or two of these substances of some general interest.

Garbage Ashes. There is a large number of tons of ashes produced at the garbage disposal plant in Toronto each year. The fertilizing value of these ashes will, doubtless, vary widely, depending on the nature of the refuse burned. A sample as it was taken from the heap, forwarded to us for analysis, gave the following results:

Lime (CaO)	6.5 per cent.
Potash (K_2O)	1.92 "
Phosphoric acid (P_2O_5)	2.67 "

Valuing these ashes on the basis of 5 cents per pound for potash and phoshoric acid, they are worth $4.60 per ton. It is quite possible that the sample analyzed contained more than the usual amount of bone ash, but it is certain that ashes of the quality of the sample sent in are well worth looking after.

Tankage. There are about 5,000 tons of the refuse from the pork packing houses in Ontario shipped out of the Province every year. This refuse, or tankage, contains a large amount of nitrogen and phosphoric acid. The sample sent to us for analysis contained the following amount of fertilizing constituents:

Nitrogen	7.55 per cent.
Phosphoric acid (P_2O_5)	14.20 "

When properly ground the nitrogen in this substance is worth at least sixteen cents per pound and the phosphoric acid five. At this rate the tankage of the above composition would be worth about $38.00 per ton. Samples received at other times have not come up to the standard, and it would not do to assume that all tankage is worth as much as this, but it is a valuable manure.

Preservatives in Milk. In July twelve samples of milk were sent to the Chemical Department by Dr. McLay, Medical Health Officer, Woodstock, to be examined for preservatives. Three of these samples were found to contain formalin. The milk dealers supplying the adulterated samples were prosecuted by the Woodstock authorities. Formalin is a very efficient preservative; but, because of its injurious effect on the system, its use is prohibited. Further, the use of formalin, or any preservative, encourages careless methods of handling. Surely infants and invalids, who are the largest consumers of milk, have enough difficulties to contend with without having to deal with preservatives and all the filth they may help to cover up in the milk.

Experiments with Fertilizers.

Under natural conditions a forest or prairie soil increases rather than decreases in fertility. The elements taken from the soil are returned to it on the decay of the plants, or on the death of the animals which feed on the plants. Thus the surface soil becomes rich in organic matter and in ash constituents which have been collected from the subsoil and left in organic combination at the surface.

As soon as the land is cultivated, oxidation of this organic matter is increased, a larger amount of water percolates down through the ground, and along with it the plant food which has been rendered soluble, and the vegetable and animal products of the land are consumed off the soil on which it was grown. A partial return of the plant food is made by the application of farmyard manure; but the sale of the grain, animals and animal products, and the loss of the fertilizing constituents from the manure before it is applied to the land, all tend to make the return of plant food to the soil incomplete.

Some soils are naturally rich in the elements of plant food, and when the crops are so rotated as to economize this natural wealth, it will be a long time before the soil needs any artificial manures; but, if the soil is naturally poor, and if special crops of like nature have to be grown year after year, it may soon need some special manuring.

During the last few years farmers have taken an increased interest in artificial fertilizers, and there is a demand for definite information regarding how and when they shall be used. Naturally this demand has come first from the vegetable, fruit, and sugar beet growers. Their crops require the expenditure of a large amount of labor in the cultivation and marketing. They are, consequently, anxious to produce maximum crops and of the very best quality. Moreover, in the majority of cases, they wish to grow the same crop, or one very similar in nature, year after year on the same soil.

I have always cautioned beginners in the use of fertilizers against the application of large quantities of these expensive materials without first obtaining some definite information regarding the need of the crop, the soil, and the nature of the fertilizer. As the requirements of the soil and crops vary, no one manure or mixture of manures can be recommended for all cases, and the growers have difficulty in deciding what fertilizer to use.

To aid them in this part of their work, we have during the last two years, planned experiments and supplied the fertilizers for practical tests on their own grounds. This last year we had twenty-one, three plot experiments, with the vegetable growers of the Toronto and St. Catharines districts; seven three plot experiments, with the oat crop on swamp soils; and five two

plot experiments with sugar beets. In the last case we made the plots one acre in size, and through the kindness of Dr. Shuttleworth of the Ontario Sugar Co., arrangements have been made to have these plots harvested separately, weighed, and tested at the factory, thus placing these tests on a commercial basis. This is the second year this experiment has been conducted; but the results for the present year are not all in. Consequently, as we have only one year's results on all the work, no figures will be given here.

On the College farm, with Prof. Day's permission, we had 13 one-tenth acre fertilizer plots. Various quantities and mixtures of fertilizers have been used on these plots, and our intention is to determine the increase in yield and the effect on the quality of the crop throughout the full rotation. As the results from these and other experiments accumulate, we hope to have information which will be of value, and at the same time help to familiarize the growers with the nature of the experimental work required, and increase their knowledge of the function of the various fertilizer constituents.

Soils of the Abitibi District.

During the last two years we have received and analyzed 18 samples of soil for New Ontario. As these are virgin soils, the results of the analyses should give a fairly clear indication of their productive capacity, provided that they are properly drained and cultivated. At my request, Mr. Fulmer prepared the following article on these soils:

Roughly speaking, the Abitibi District occupies that portion of New Ontario found in the Districts of Algoma and Nipissing and lying between the latitudes 49-51 north. Thus it will be seen that this part of the Province is not so far north as the name is apt to cause the southern resident to imagine. It is practically on the same line with that of Winnipeg and Regina and lies a good many miles south of Saskatoon and a great many more of the newly opened up wheat-raising belts of Saskatchewan and Alberta. It is beyond the height of land and has a northern exposure and has not the benefit of the warm tempering winds from the south with which the central west portion of Canada is favored; yet the temperatures are not unbearable, and during the summer months it is nothing uncommon to have the thermometer reaching to the upper eighties. The growing season is some three weeks later in beginning than in older Ontario, but is accompanied by plenty of sunshine and rain, the two conditions which will bring the more hardy of our root and grain crops to maturity.

The all important question, however, the one concerning the suitability of its soil for producing the ordinary farm crops in paying or even sustaining quantity, and the potentiality of the same for supporting an agricultural population for any length of time, has not, as yet, been answered to any satisfactory extent. True, surveying and exploring parties returning from there give glowing reports as to the magnificent extent of apparently fine farming tracts, well wooded with principally the pulping varieties of forest trees, admirably situated, lying as they do largely along the banks of rivers and about lakes which are there rather numerous, as one would expect in a Laurentian region, together with the excellent opportunities afforded for draining the more inland parts, which are now wet and swampy, but which, if reclaimed, would bring into use deep and rich virgin soils. This information is too meagre, though, to offer much inducement to the homeseeker who has not the hardihood of a pioneer.

That a chemical analysis of representative soils from Abitibi will throw a little light upon the potentiality before referred to, of this district, is, I think, sufficient reason to warrant the presentation of what little data we have collected along that line in this department. During the summers of 1904 and 1905 Dr. A. Henderson of Toronto, in the capacity of biologist of an exploring party, collected a large number of samples of soil, the more promising ones of which he sent to this laboratory. Therefore it is through his kindness that we are enabled to produce these results, together with any data attached concerning location, timber, vegetation, etc.

Composition of Abitibi Soils.

No. of Soil.	Moisture.	Organic and Volatile matter.	Insoluble residue.	Iron and Aluminium Fe_2O_3, Al_2O_3	Lime, (Ca. O.	Magnesia, Mg. O.	Potash, K_2O.	Phosphoric Acid, P_2O_5.	Nitrogen.	Humus.
1905										
1	1.4	3.9	86.3	6.52	.795	.51	.25	.115	.087	1.28
2	.22	1.39	96.0	1.04	.46	trace	.095	trace	.047	.45
3	3.4	13.55	67.3	9.23	1.62	.48	.75	.17	.387	6.98
4	.72	3.64	68.7	4.3	.91	.77	.183	trace	.07	.90
5	4.30	14 33	64.8	12.15	1.29	1.34	.74	.143	.297	5.05
6	3.91	7.36	68.1	14.45	1.08	2.26	.864	.105	.12	1.07
7	5.15	14.27	60.31	13.55	1.58	1.6	.89	.24	.157	8.21
8	5.29	19.24	54.8	11.81	1.81	.61	.96	.238	.512	6.42
1906										
9	12.14	74.46	4.26	.85	2.92	trace	.123	.305	1.414	25.7
10	.41	6.04	71.19	6.94	5.93	"	.207	.295		
11	1.79	4.28	79.09	10.85	.99	.293	.215	.049		
12	14.17	74.64	3.09	.17	2.66	trace	.111	.325	1.827	19.05
13	.88	16.26	51.47	8.85	15.13	"	.475	.285	.035	
14	2.54	7.57	76.32	11.71	.34	"	.32	.24	.112	
15	6.36	19.75	58.49	12.27	1.35	"	.451	.285	.378	12.4
16	2.02	4.2	82.35	9.01	.73	"	.37	.225	.0212	
17	1.39	2.9	83.02	8.30	1.18	.485	.356	.21	.021	
18	2.86	4.54	77.3	10.88	.91	"	.699	.265	.042	
19*	2.69	10.23	72.3	7.57	2.46	1.13	.434	.394	.286	4.19

*Average of ten soils from the College farm.

No. 9—5.68% residue of undecayed wood.
No. 10—Quite highly carbonated subsoil of 9.
No. 12—14.7% residue of undecayed wood.
No. 13—Very highly carbonated.
No. 14—Subsoil of No. 15.

No. 1. From Frederick House River bank at north boundary of Mann Township. Loam. Drainage good. Well wooded with poplar, spruce and balsam.

No. 2. From north boundary of third township north of Tully Township. A loam soil, bearing poplar, spruce, balsam, balm and birch.

No. 3. From Teefy Township. This represents soil occupying about sixty-two per cent. of the township and is well wooded with large poplar, black and white spruce, balm of Gilead, balsam and occasional birch and jack pine.

No. 4. Collected in Knox Township. Apparently well drained. A clay soil with timber similar to No. 3, but not so heavy.

No. 5. Teefy Township at Iroquois Falls. This is a heavy clay soil representative of the clay belt.

No. 6. From bank of creek flowing into Frederick House River, near Niven's Line. Timber scattered and much windfall. Clay to heavy clay.

No. 7. Tamarac Swamp subsoil, north Abitibi River, opposite mouth of Dokis.

No. 8. From banks of creek in Knox township. Most productive soil in Abitibi country.

No. 9. Decaying peat from spruce woods.

No. 10. Subsoil from under No. 9. Heavy clay.

No. 11. Taken from Patten's baseline at milepost between Muskego and Mattagami. Clay.

No. 12. Same locality as No. 11.

No. 13. Landslide on bank of Mattagami, two miles above Niven's Line of 1900. Clay.

No. 14. Patten's Meridian of 1904. Clay loam.

No. 15. Soil above No. 14.

No. 16. Taken six miles east of the Mattagami, opposite milepost eight, on Speight's Meridian, 1905.

No. 17. Eastern boundary Mahaffy Township, between concessions 5 and 6.

No. 18. Taken from the bank of the Mattagami River, one mile south of north boundary of Mahaffy. The banks of this river are well wooded with the usual river bank trees—poplar, spruce, balm of Gilead, birch, balsam and some cedar.

The results recorded in the above table, noting the amount of the different constituents present in the soils, were obtained by extracting for ten hours at the temperature of boiling water with strong hydrochloric acid (1.115 specific gravity). Therefore the amounts indicated of the different elements of plant food do not show the total amount present in the soil of those more difficultly soluble elements, such as potash and aluminium, but they do show, according to repeated observations, the limits to which each is subject to attack by the roots of a growing plant. In the case of lime, magnesium and phosphoric acid probably the total amounts present are shown; and with nitrogen and humus the percentage shown is practically absolute. To quote Hilgard ("Soils," page 340) "the analysis of soils by extraction with strong acids is intended to enlighten us, not in regard to their *immediate* productiveness, but as to their *permanent value or productive capacity.*" Our results show, then, merely the productive capacity, or in other words, the potentiality, of the soils in question. Of the immediate productive capacity, or the availability of the different elements of plant food for at once nourishing a crop, our table tells nothing. And this is where this sort of chemical analysis fails.

Where our figures are of value though is where they show when an element is present in too limited a quantity to allow of a profitable crop production. By extended analytical work, skilfully done, and by the combination of the same with unlimited cultural experience, a great many of our eminent and conscientious workers have arrived at figures which denote pretty accurately the limits of the most important elements which are allowable in a profitable agricultural soil, and which show the need or not of an amendment or ameliorant.

To form a basis for discussion, now let us note what these limits are. As we are dealing with what are *virgin soils* we will use the limits designated by Hilgard in his book, "Soils.". When such soils are investigated it becomes apparent that besides the low percentage of one ingredient, the proportions of others present require consideration. Lime is one of these. If present in the carbonate form it exerts a very beneficial influence in a great many ways, as is witnessed by the marked change in vegetation in passing from a district where it is plentiful to one where it is deficient. To make a statement, it is found that where calcium carbonate is plentiful percentages of potash, phosphoric acid, and nitrogen below the limit, are allowable. This fact will make a difference in our discussion. The minimum limit for potash is given as .25 per cent., for phosphoric acid (P_2O_5), .1 per cent. to .05 per cent., for nitrogen, .1 per cent.; whereas .45 per cent., .1 per cent., and 1 per cent., respectively, are considered quantities showing adequate supplies of these three. With lime, the limits differ; on a sandy soil .1 per cent. is necessary to give the characteristic lime vegetation, while on heavy clay soils .6 per cent. is needed.

Turning now to our table of composition, we shall see what the productive capacity of some of our Abitibi soils promises to be. Glancing down the column headed CaO, we find that, standing by itself, there is likely none of the soils deficient in lime, and most of them are abundantly supplied with it, soils 10 and 13 being markedly rich in what is apparently the carbonate, the most active form of this constituent. In potash (K_2O), soils 2, 4, 9, 10 and 12 are all deficient. Soil No. 1 is just on the limit; while all the rest are quite well supplied. Two soils, Nos. 2 and 4, are markedly poor in phosphoric acid (P_2O_5), while Nos. 1 and 6 are just merely above the limit in the same constituent. In nitrogen we have a remarkable condition for soils which have as yet never been cropped. No less than eight out of the eighteen are below the limit in this element of plant food, and only two, Nos. 9 and 12, show a quantity which would give a supply for years to come, providing a system of exhaustive cropping were to be followed. Soil No. 10 shows no nitrogen, but this is not important, since it is a subsoil of No. 9, which contains an abundance. It shows plainly, though, that the stage of decomposition of the covering of vegetable matter above has not as yet proceeded very far. This is borne out by the remark after No. 9. Humus in those soils in which it was determined is quite abundant except in soils Nos. 2 and 4. Humus is a very important constituent, for a soil's water-holding power depends largely on it; and it is an excellent ameliorant for a clay soil, to which all the soils in the table are, interpreting the aluminium (Al_2O_3) column correctly, with the exception of soil No. 2, and, of course, the clearly peat soils Nos. 9 and 12. Magnesia (MgO) is an element essential to plant development. A ton of ordinary hay will contain 7 pounds of it, and other crops take up a corresponding amount. We find that it is reported as occurring in nine of the soils only in traces. Plainly if it is not in the soil, the plant can not develop.

Taking the soils separately, we can arrive at more definite conclusions. Soil No. 1 is only an average soil; it is just about on the limit in all its important constituents. With lime as an ameliorant it would likely give satisfactory results, provided it were carefully nurtured. No. 2 is notoriously poor in everything and can certainly be condemned as hopeless. Soil No. 3 is good, and is representative of about 62 per cent. of Teefy Township. It has not an abundant supply of P_2O_5, but the lime is abundant enough to alleviate this difficulty. Soil No. 4 can be condemned for lack of P_2O_5 and deficiency in nitrogen and potash. Nos. 5, 6, 7 and 8 are all bountifully supplied with K_2O and can probably be classed as good agricultural soils No. 5 soil is representative of the clay belt, and is without doubt a good one. No. 7 is a subsoil and is remarkably rich. Here deep plowing would undoubtedly soon produce a fine productive soil. Soil 8 is considered to be the richest soil in the Abitibi district, and its composition compares with the productive soils of the College farm (No. 19). All these four soils are fairly heavy clay, but they contain enough lime and vegetable matter to alleviate them and allow them to be worked up into a friable condition. No. 9 is almost wholly peat, but with its subsoil, following a system of deep plowing, would soon produce a good soil. There is enough $CaCO_3$ (5.93 per cent. CaO, which is largely present as carbonate) to retain a neutral reaction on the decay of the organic matter and to allow the process of nitrification to proceed smoothly. Soil No. 12 is another peat bed, and is yet not very far advanced in the stage of decomposition. If it has a desirable subsoil, it will be to it a valuable source of nitrogen and humus in some future time. No. 13 is taken from a landslide, and, as might be expected, is highly charged with $CaCO_3$, due to the working up to the surface, during the time of the slip, of particles of limestone and granite. Soil 14 is the subsoil of 15 and shows the depth to which the abundance of mineral constituents extend. The remaining soils, 11, 16, 17 and 18 do not require any special mention, except that they, along with Nos. 1 and 13, range low in nitrogen.

Out of the sixteen soils (taking 9 and 10 as one, and also 14 and 15) probably only two, Nos. 2 and 4, can be condemned. As to the extent of territory which these occupy, there is no data at hand to show. All the rest can be accepted as possessing productive capacity, although none of them, except No. 8, come up to the standard of a virgin soil. Magnesia is reported as present only in traces in a great many cases, but there is probably enough present to satisfy the wants of numerous crops. Nitrogen is also low in 6 cases (1, 11, 13, 16, 17 and 18), but by careful cultivation and the use of leguminous crops this drawback would be overcome to a great extent.

While it is true that the conclusions arrived at from the results of chemical analysis alone cannot be taken as final, we feel justified in stating that, where drainage and cultivation receive due attention, much of the soil in the Abitibi district possesses sufficient plant food to grow many remunerative crops, and that it has a great agricultural future.

INVESTIGATION WORK.

The main line of research work carried on during the last year was in connection with breakfast foods. We have analysed 68 samples of these foods and have conducted 47 digestion experiments with the human subject in order that we may ascertain their composition and digestibility. We are also determining the extent of the change caused by the predigesting of breakfast foods, and the extent of the changes brought about by long and short periods of cooking the raw materials. This latter part of the investigation is not completed. When all the work is finished, we intend preparing a bulletin on the subject. In the meantime, I have summarized the results available and present them in the following article:—

Breakfast Foods.

The cereal grains and the preparations made therefrom occupy a very prominent place in human dietaries. This is doubtless due to the fact that these foods are, as a rule, cheap; that, when properly prepared, they are comparatively easily and completely digested; and that they contain all the constituents required to nourish the body. Wheat bread has long been known as the "staff of life," and many of the grains have been used in the cracked or ground condition for ages; but within recent years an almost endless variety of wheat and oat products have been placed on the market under the name of "breakfast cereals" or "breakfast foods." According to the claims made for some of these new foods, they are not only a perfect food in a condensed form, but they are also brain tonics and have a variety of wonderful virtues.

The various types of breakfast foods may be roughly divided into the following classes: First, the uncooked, as the old forms of granulated oatmeal and the wheat farinas. The foods of this class are served either after cooking for a short time or after cooking for several hours. The latter method of preparation renders them more palatable and more easily digested. Second, the partially cooked, to which the rolled and flaked grains belong. In the preparation of these foods the grain is softened by steaming and then rolled and dried. During the process they are slightly cooked and the cell walls ruptured; consequently, this class of foods may be prepared for the table in less time than those of the previous class. A third class are the cooked foods, such as shredded wheat, which may be served at once without any special treatment. A fourth class are the malted foods. These are supposed to be both cooked and partially digested. Force, Orange Meat, Norka, Grape Nuts, etc., are types of this class.

In determining the relative value of foods, at least three points must be taken into consideration. These are chemical composition, digestibility, and cost. It is true that a food must be palatable and that it must "agree" with the person using it, but these are points upon which there is always likely to be a difference of opinion. That these cereal food products are relished is evidenced by the fact that they are so extensively used. This, too, is fairly good evidence that they "agree" quite generally with those who eat them. However, these are factors which cannot be measured and which do not after all seriously affect the value of any comparison that may be made.

In our study of the composition of the breakfast foods, a large number of analyses were made, the results of which are incorporated in the following table:—

PERCENTAGE COMPOSITION OF SOME BREAKFAST FOODS.

	No. of samples analysed	Water	Crude Protein	Crude Fat	*Carbo-hydrates	Crude Fibre	Ash	Energy per gram Calories
Granulated Oats	12	7.75	12.29	6.65	71.71	1.59	1.60	4.283
Rolled Oats	19	8.55	11.83	6.61	71.35	1.25	1.66	4.238
Wheat Farina	8	10.63	9.70	1.05	78.23	0.62	0.57	3.876
Wheat Germ	1	8.39	10.97	2.79	76.77	1.16	1.08	4.034
Rolled Wheat	2	10.41	8.77	1.90	77.22	2.05	1.70	3.860
Flaked Barley	4	10.58	9.71	1.43	76.81	2.07	1.47	3.854
Corn Meal	2	9.76	6.99	1.26	81.49	0.52	0.50	3.870
Orange Meat	3	8.66	9.70	1.31	78.43	†1.95	1.90	3.909
Force	3	9.06	10.14	1.51	76.88	†1.85	2.41	3.886
Norka	3	7.38	14.33	5.55	69.91	†1.84	2.83	4.229
Malta Vita	3	8.23	9.88	1.39	78.27		2.23	3.915
Grape Nuts	3	7.08	11.49	.94	78.78		1.71	3.995
Canada Flakes	2	8.97	10.84	1.18	76.22		2.79	3.874
Shredded Wheat	2	9.41	11.53	.85	76.51		1.70	3.916
Rice Flakes	1	12.29	7.24	0.08	80.04	†0.55	0.35	3.716

*Including fibre.
†One result only.

The main functions of food are: First, to form the materials of the body and to repair waste; and, second, to yield heat to keep the body warm and to furnish power for the work it has to do. In the first case, the food serves for the growth and repair; in the second, it serves as a fuel.

The protein compounds are the principal tissue formers. They build up and repair the muscles and tendons and supply the albuminoids of the blood and other fluids. They may also be burned in the body, and thus may serve as a fuel. Protein, or more correctly speaking, a certain part of the protein, is the only constituent of the food capable of forming flesh or muscle, hence they are the most expensive.

Fat and carbohydrates, on the other hand, are the chief fuel ingredients of the food. The fat, however, is capable of producing 2.25 times as much heat as the same weight of carbohydrates. They may both be transformed into body fat when taken into the system in excess of what is required for heat and energy.

The crude fibre is practically indigestible, and, while it has a limited physiological value, much of it in a food detracts from its nutritive value.

The ash is used in the formation of bone, and to supply the organic materials in the fluids of the body.

If, then, with the above facts in mind, we study the composition of the breakfast foods, it will be found that the oatmeals and Norka, which is an oat product, contain the most proteids and fat, while all the other foods are richer in carbohydrates. The cornmeals are the lowest in crude protein and highest in carbohydrates, and the wheat farinas and cornmeal contain the least fibre. The germ is richer in protein and fat, consequently we are not surprised to find wheat germ richer in these constituents than the other wheat products. Taking all the facts into consideration, we would naturally be led to conclude that as the oat products contain the most muscle-forming substances and the largest percentage of fat, they are the most nutritious foods.

However, it is very hard to form a correct estimate of the nutritive value of foods, differing in composition, as these do, by balancing a high protein and low carbohydrate content against a low protein and a high carbohydrate. Possibly the best method of making a comparison, and the one usually followed, is to compare them on the basis of the number of calories of heat they will produce when burned. A calorie is the amount of heat required to raise one thousand grams of water one degree centigrade in temperature. It is usually assumed that one gram of protein will produce approximately 5.9 calories, fat 9.3, and carbohydrates 4.1. Calculating on this basis with each of the foods, we obtain the figures placed in the last column of table of composition. Reference to these figures shows that upon this basis of comparison the oat products stand highest and that the much advertised prepared breakfast foods have very little the advantage of the ordinary wheat farinas.

But the above figures refer only to the composition and heat producing power of the foods, and do not take into account the differences in digestibility, or the amount that would be absorbed by the body when they were eaten. It is only that part of the food which is digested and absorbed that has any nutritive value. Therefore, to carry the comparison further, we must determine the digestibility, or the availibility, of the constituents of the various classes of foods.

Owing to the many difficulties surrounding this part of the work, it is impossible to arrive at absolutely correct figures regarding the digestibility of a food. The method generally followed is to determine the difference between the quantity of each constituent, *i.e.*, protein, fat and carbohydrates, in the total food eaten and the amount of the corresponding ingredients in the feces. The difference is taken as the amount digested. This is calculated to percentage of the given nutritient digested; or, as it is generally called, the co-efficient of digestibility. Strictly speaking, the results thus obtained do not represent actual or true digestibility, because the feces contain not only the portions of the food that are not digested, but, also, other materials, such as digestive juices and excretory products. On the other hand, these waste materials, or metabolic products, may be considered as representing the cost of digestion in terms of food ingredients. Consequently, while the figures arrived at may be a little below the true digestibility of the food, they do represent the amount of food that will be available to the body.

Each of our digestion experiments extended over a period of four days, and healthy young men were used as subjects. They were all interested in the work and co-operated in every way to make the result as accurate as possible. Each subject was allowed to use sugar and cream of known composition to suit his taste, but an accurate account was kept of the amount consumed. As the food under experiment was also carefully weighed and analysed, it was possible to calculate the total amount of each constituent eaten. From this was deducted the amount of the various constituents found in the feces obtained from the food eaten during the experiment. The results got in this way must of necessity show the digestibility of the whole diet, and not of the breakfast food only. But, as both the sugar and cream would be almost wholly digested and were used in very nearly equal quantities throughout all the experiments, the results must be, at least, comparative. Naturally, however, with such materials as the farinas, where the percentage of fat is very low, the digestion co-efficient for the fat cannot be considered very accurate. The first part of the following table gives the

percentage amount of each constituent of the full diet digested. Dr. Atwater states that 97 per cent. of protein, 95 per cent. of the fat, and 98 per cent. of the carbohydrates of cream and sugar are digested.* Assuming the correctness of these figures, we have calculated the percentage amount of each of the constituents of the breakfast foods digested and have placed these figures in the second part of the table.

PERCENTAGE AMOUNT OF EACH CONSTITUENT OF THE FULL DIET DIGESTED.

Name.	No. of digestion experiments.	Organic matter.	Crude protein.	Crude fat.	Carbohydrates.
Granulated oats	6	94.5	84.4	92.2	97.6
Rolled oats	10	94.7	82.8	93.5	98.2
Wheat farinas	11	95.6	79.8	95.3	98.2
Wheat germ	3	96.9	89.7	96.1	98.5
Rolled wheat	3	93.8	79.2	95.6	95.2
Flaked barley	5	95.4	76.2	94.8	97.0
Corn meal	3	96.2	81.7	95.3	98.6
Orange meat	2	93.4	84.4	94.9	95.5
Force	2	91.1	69.4	93.3	95.3
Norka	2	94.3	83.3	92.0	97.6

CALCULATED TO FOOD ALONE.

	Crude protein.	Carbohydrates.		Crude protein.	Carbohydrates.
Granulated oats	80.8	98.1	Flaked barley	69.1	97.1
Rolled oats	80.0	98.4	Corn meal	73.7	98.9
Wheat farinas	72.5	98.8	Orange meat	75.7	94.6
Wheat germ	88.0	98.8	Force	58.7	94.4
Rolled wheat	74.1	94.8	Norka	81.0	97.7

According to these results the wheat germ was more fully digested and absorbed than any other food. It stands highest in the amount of organic matter and in each of the various constituents absorbed from both the full diet and from the wheat germ alone. The protein of all the foods is less completely absorbed than the other constituents. This is particularly true of that in Force. It is also worthy of note that the carbohydrates of Orange Meat, Force and Norka were not so fully absorbed as they were from the other foods. Certainly there is nothing in these results to indicate that the high priced prepared breakfast foods are any more completely digested and absorbed than the wheat farinas and rolled oats, or even than the old forms of granulated oatmeals.

So far we have compared the foods on the basis of composition, fuel value, and digestibility, but to find the relative economy of these goods, their cost must be considered. From the data given in the preceding tables and the retail price of the foods, it is an easy matter to calculate the fuel value of the digestible matter obtained from the quantity of each of the

*Storrs Agricultural Experiment Station Report 1904, page 191.

foods that can be bought for a certain sum of money. For the purpose of comparison, we have calculated the number of calories of heat that the digestible matter in ten cents worth of each of the foods is capable of producing. The retail price of the foods in Guelph was used in the calculation.

NUMBER OF CALORIES OF HEAT OBTAINED FROM THE DIGESTIBLE MATTER CONTAINED IN TEN CENTS WORTH OF THE FOODS.

Food.	Price.	Calories
Granulated oats	In bulk 7 pounds for 25c	5128
Rolled oats	" " 7 " " 25c	5088
" "	In package 2 " " 10c	3635
Farinas	In bulk 7 " " 25c	4698
"	In package 2 " " 15c	2232
Wheat Germ	In bulk 7 " " 25c	4956
Rolled Wheat	" " 6 " " 25c	3934
Flaked Barley	" " 2 " " 10c	3330
Corn Meal	" " 8 " " 25c	5397
Orange Meat	" package 20 ozs. " 15c	1368
Force	" " 16 " " 15c	1136
Norka	" " 22 " " 15c	1639

The above figures show that upon this basis of comparison cornmeal is the most economical, with the oatmeals second and wheat germ third. Force stands at the bottom of the list, and only furnishes a little over one-fifth the number of calories credited to cornmeal. It is also plain that oatmeal and wheat farina are very much more expensive in package than in bulk. In the case of the latter substances, less than half the number of calories are obtained for the same money. The meal in the package may be cleaner and more conveniently handled, but if the meal can be procured from a dealer who is selling sufficiently large quantities to insure a fairly fresh supply, it is very doubtful if anything is gained by purchasing in package.

Among the goods put in package, the predigested foods are the most expensive. This is to be expected, as these foods have been mixed with malt and are cooked ready to serve. Just how much better they are for this treatment is hard to say. They may be more easily digested. All foods require the expenditure of energy in their digestion, and it is only natural to suppose that the predigested foods require less energy for this purpose than foods of the nature of rolled oats. However, we have no way of procuring data on this point, but certainly they do not appear to be any more fully absorbed in the system.

According to the above figures, then, it is evident that the raw corn, oat and wheat products, especially when bought in bulk, are the cheapest per pound. It is possible that the cost of fuel for cooking may render their use very little more economical than some of the prepared foods. These considerations must vary with circumstances. In many instances when a coal or wood fire is used, it is doubtful if the cooking of the porridge costs very much additional. These are, however, points on which conditions vary, so that it is practically impossible to gather reliable information, and each one must decide them for himself.

The thoroughness of cooking has an influence on the actual food value of all the breakfast foods, for if the cereal preparations are not well cooked, some of the nutritive material will escape the digestive juices. To gather

some information on the digestibility of oat and wheat meals, as influenced by cooking for a short and for a long period, we cooked these foods for twenty minutes, the time commonly employed, and for eight hours, and then determined the digestibility in the ordinary way. In the case of the short cooking, the twenty minutes was taken from the time the mass began to bubble, and it was kept boiling hard throughout the whole time. In the long cooking experiment, the mass was brought to the boil and then placed in a double boiler and kept at the boiling point of water for eight hours.

In determining the digestibility, triplicate experiments were conducted with two samples of rolled oats and two of wheat farina. In order that the results might be strictly comparable, the same subjects were used in determining the digestibility of the meal cooked for the short and long period. Different subjects, however, were used with each sample of meal. This was done to bring in as many conditions as possible. The results of two experiments with the oat meal and one with the wheat farina were discarded. The digestion co-efficients were all very close, and only the averages are given below.

DIGESTION CO-EFFICIENTS OF ROLLED OATS AND WHEAT FARINA AS INFLUENCED BY SHORT AND LONG PERIODS OF COOKING.

Name.	No. of digestion experiments.	Organic matter.	Crude protein.	Crude fat.	Carbohydrates
Rolled Oats— Short cooking.....	4	94.2	81.5	92.5	98.0
Rolled Oats— Long cooking.....	6	95.4	84.3	94.6	98.3
Wheat farina— Short cooking.....	5	95.5	79.3	94.9	98.3
Wheat farina— Long cooking.....	6	95.3	79.4	95.6	98.5

From the above results, it is evident that the length of time the meal was cooked did not very materially influence the percentage amount digested. It is, of course, possible that less energy may have been expended in digesting that which was cooked the longer time; but no figures could be procured on this point. It is, however, important that starchy foods be cooked sufficiently long to cause the rupture of the starch cells. Judging by results, this apparently was accomplished, at least, nearly as well in one case as in the other.

From all the data presented, it is evident that corn meal, rolled oats and the farinas, especially if bought in bulk, are the most economic "breakfast foods." It is, however, true that these foods do not agree with everyone, and that the so-called predigested foods may be useful for those people who have difficulty in digesting starch. They may also have a place in a hurry-up breakfast; but it is evident that a curious name given to a much advertised food does not indicate a high nutritive value, and the intelligent buyer who has to consider economy will hardly pass by the old forms of breakfast foods unless his own experience has actually demonstrated that these newer foods have a superior value.

SUGAR BEET INDUSTRY.

In last year's report I gave a brief synopsis of the development of the sugar beet industry in Ontario. With reference to the present campaign, now nearly half completed, I may say that both the Berlin and Wallaceburg factories have a larger supply of beets than in any previous year, and it is probable that each company will slice about 55,000 tons. The quality of the beets delivered at the Berlin factory is quite satisfactory. The average percentage of sugar in the beets delivered up to date is considerably over 15, and it is fully expected that the average for the season will be slightly above the 15 mark.

In the vicinity of Wallaceburg the weather conditions have not been so favorable, and the average per cent. of sugar will probably be fully two per cent. lower than at Berlin. The long drought which prevailed in that section of the country did not break until late in September, and was then followed by excessively wet weather. The result is that the beets did not make sugar as rapidly as they should in the early fall, and when the wet weather set in they began to send out fresh tops, thus using up the sugar previously formed. These combined conditions have not only made the work of handling the crop unsatisfactory, but it has also reduced its value nearly one dollar per ton, as compared with former years.

Test of Different Varieties of Sugar Beets.

Ever since this department undertook extensive experimental work to ascertain the suitability of Ontario soil and climate for growing sugar beets for sugar factory purposes in 1900, we have co-operated with the Experimental department in determining the difference between the various varieties of sugar beets grown on the College plots. Some of the varieties experimented with are those commonly used as cattle food; others are of the type grown for sugar factory purposes. The seed of the latter varieties was procured from the best known seed dealers in this country and in Germany. The beets were all grown on the level, in rows 21 inches apart, and thinned so as to leave the plants 8 inches apart in the row. The object was to determine the yield per acre and the percentage of sugar, and also to obtain figures of comparison between some of the newer German varieties and the variety now extensively used by the sugar beet growers of the Province.

Percentage of Sugar and Purity of Juice of Different Varieties of Sugar Beets.

Among the cattle food varieties, the Giant White Feeding produced the largest beets, but the lowest percentage of sugar. The Royal Giant and Tankard Cream are also large beets with low sugar content. It is quite probable that these varieties will not give as good results when fed to cattle as the New Danish Improved, Red Top, and Giant Rose Feeding, etc., which contain more sugar. It is possible that a greater number of tons per acre may be grown of one variety than another, and this may be sufficient to offset the difference in the sugar content. The yield per acre will be found in the report of the Experimentalist, which forms Part XIII. of this volume.

Name.	Average weight of beets.	1906.			Average of six years.	
		Solids.	Sugar.	Purity.	Sugar.	Purity.
	ozs.					
New Danish Improved	21.4	12.7	9.6	75.4	10.9	80.1
Red Top	19.1	14.0	10.8	77.0	11.1	80.3
Royal Giant	23.4	12.1	8.4	69.5	9.9	79.3
Giant Rose Feeding	18.8	12.4	9.5	76.5	12.4	85.9
" White "	32.4	10.9	6.3	57.4	7.8	69.9
White Silesian	20.6	15.1	12.5	83.0	13.5	82.6
Red Skinned	15.4	12.6	8.5	67.0	11.3	80.6
Green Top, White	16.9	13.6	9.2	67.5	12.5	80.4
Lane's Improved	15.6	16.2	12.8	79.0	12.6	82.5
Champion	13.0	18.9	16.2	86.1	15.8	85.9
Kleinwanzlebener	13.5	18.3	16.0	87.8	16.5	87.4
French Yellow	14.9	15.9	13.2	82.9	12.2	81.5
Pitschekes Elite	15.3	18.3	15.9	86.8	15.9	88.6
Improved Imperial	13.2	19.9	17.8	89.3	17.0	87.2
					Average of five years.	
Tankard Cream	20 3	13.5	10.1	75.0	8 9	75.7
Jaensch's Victorix	12.3	18.6	15.7	84.6	15.9	85.3
Rubensamen Rimpau	16.6	19.9	17.1	86.1	17.3	87.7
					Average of four years.	
Rennie's Giant Sugar	18.6	11.9	9.1	76.6	10.0	78.4
Hybrid Sugar Beet Mangel	18.3	13.1	9.2	70.4	10.2	77.5
Imperial Giant Half Sugar	17.8	13.7	10.5	76.5	10.6	78.0
					Average of two years.	
Braune	16.4	17.9	14.8	82.6	15.7	88.8

Among the varieties comparable with the Kleinwanzlebener, which is at present the most popular variety with sugar factory beet growers, the Rubensamen and the Improved Imperial have done well. In fact the average results obtained from five years' experimental work in one case and six years in the other, show that on our soil these two varieties are at least the equal of the Kleinwanzlebener in purity, and contain slightly more sugar. Reference to the report of the Experimentalist will also show that there is very little difference between these varieties with regard to yield in tons per acre. What little advantage there is in tons per acre, percentage of sugar, and in purity is in favor of these new varieties, and especially of the Rubensamen.

Quality of Sugar Beets as Affected by the Distance Between the Rows.

This experiment has now been carried on for five years in succession. The beets have been grown on soil of uniform condition, in rows 12, 14, 16, 18, 20, 22, 24, 26, and 28 inches apart, and in every case thinned so as to leave the plants eight inches apart in the row. A duplicate set of plots has been grown each year, and in nearly every case at least two sets of samples have been collected for analysis from each plot every year. The object of the experiment was to determine what effect the distance between the rows

would have on the yield per acre and the sugar content of the beets. The yields would be found in the report of the Experimental Department, and the percentage of sugar is given in the following table:

PERCENTAGE OF SUGAR AND PURITY OF JUICE OF BEETS GROWN IN ROWS DIFFERENT DISTANCES APART.

Space between rows.	1906. Average weight of tared beets.	1906. Analysis of juice. Solids.	Sugar.	Purity.	Average weight of tared beets.	Average result of five years' analysis. Solids.	Sugar.	Purity.
Inches.	Ozs.				Ozs.			
12	10.5	19.8	17.3	86.9	10.3	20.0	17.1	85.7
14	11.6	19.2	16.1	83.8	11.6	19.8	17.2	87.2
16	10.7	19.8	16.8	84.4	13.4	19.6	16.8	86.4
18	10.0	19.6	17.0	86.9	12.8	19.3	16.9	87.8
20	13.4	18.8	15.5	82.5	14.4	19.7	17.0	86.3
22	15.9	19.2	15.1	78.6	15.5	19.3	16.4	85.2
24	15.1	18.7	16.2	86.8	17.3	19.4	16.9	87.3
26	16.1	19.1	16.0	83.6	18.2	19.0	16.9	88.8
28	14.8	19.5	17.1	88.9	18.2	19.3	16.8	86.8
30	17.8	19.1	16.5	86.6				

In all this experimental work, samples for analysis were collected from all the plots the same day, so that uniformity of weather conditions might be preserved. With one exception the average of five years' results shows that there was a regular difference in the weight of the beets as the distance between the rows is increased. There is, however, no corresponding falling off in the percentage of solids and sugar, and no decrease in the purity of the juice. According to these results, the distance between the rows, provided there is a full stand of plants, does not injuriously affect the quality of the beet. Naturally, there are a greater number of beets the closer the rows are together, but, although the average weight is less, the aggregate weight is greater, and the heaviest yields, and consequently the largest gross results, are procured from the rows grown close together. It is, however, quite probable that if these experiments had been carried out on low-lying and richer ground the results might have been quite different. The soil used was a loamy soil, not so rich in plant food as to retard ripening. This is seen in that the percentage of sugar and the purity of the juice is as high in the beets grown in rows 28 inches apart as in those grown 12 inches apart. Had the ground been stronger, the beets grown in the rows the wider distance apart might have been larger, but the sugar content would probably have been lower. Taking all points into consideration, I think it will be found that on average soil and under average conditions, *the best general results will be got when the rows are placed as close as possible without seriously inconveniencing the work of cultivation.* With the implements now at the disposal of the sugar beet grower, it is possible to conveniently cultivate between rows 18 or 20 inches apart, and this is the spacing usually recommended by those interested in the production of beets for sugar factory purposes. If the proper cultivators are not to be used, the rows may be placed farther apart, and, provided the full stand of beets is secured, the quality may be as good, but the yield will be less.

MOISTURE, SALT, AND CURD IN BUTTER.

Some time ago the complaint was made that Canadian butter was too dry and that, as a result, it did not "spread" easily. To aid the buttermakers in their desire to study methods of manipulation to incorporate more moisture, we offered to determine the per cent. of water in all samples of butter taken according to directions, and accompanied by a detailed statement of the methods employed in its manufacture. Altogether 162 samples were received. In all of these the per cent. of water was determined, and in some the per cent. of salt and curd. We also ascertained the per cent. of moisture, salt, and curd in 113 samples of butter entered in the butter contest conducted by the Dairymen's Association. The results of the analyses of all the samples are summarized in the following table:

	No of Samples.	Lowest.	Highest.	Average.
Moisture	375	9.04	19.92	13.5
Salt	168	.61	5.98	2.33
Curd	167	.102	.849	.564

The percentage of salt in a number of apparently saltless butters was determined, but these are not included in the above statement. It will be noticed that there is a very wide difference between the lowest and highest percentages of the different constituents determined. In eighteen samples the percentage of water was higher than 16, which is the maximum amount allowed by law. It must, however, be remembered that with 172 samples of the butter, the maker was studying methods of incorporation of water, and that the amount of moisture found in this butter would probably be above the average. The statement of the results obtained from the butter sent in from creameries as distinct from the contest butter is given below:

Butter from Creameries.	No of Samples.	Lowest.	Highest.	Average.
Moisture	162	10.34	19.92	14.1
Curd	54	.376	.849	.626
Salt	55	.61	4.04	2.74
Contest Butter.				
Moisture	113	9.04	15.82	12.0
Curd	113	.102	.842	.503
Salt	113	.61	5.98	1.92

From the above it is evident that the butter sent from the creameries was more moist than that entered in the competition. In the latter class of butter, the maximum percentage of moisture was under the lawful limit, whereas in the former it is nearly four per cent. above. It is, however, quite probable that the amount found in contest butter more truly represents the water content of the average butter.

In 1902, F. T. Shutt, Chemist of the Dominion Farms, determined the per cent. of water in 105 samples of butter from creameries in various parts of the Dominion and from warehouses at Montreal.* The average moisture content of all the samples was 12.31.

* Department of Agriculture, Dairy Division. New Series.—Bulletin No. 4.

It is evident the butter was not all made for one market, for there is a very wide difference in the percentage amount of salt. The 5.98 per cent. obtained in the contest butter is abnormally high, but the three samples entered by the contestant were all very nearly the same, so that it would not appear that this was an accidental result.

The percentage of curd is much lower than that recorded from many American analyses. However, the results were got by following one of the official methods of the A. O. A. C., the nitrogen being multiplied by the factor 6.38 to obtain the curd. A few check determinations were made by digesting a sample of the whole butter, but no material difference in the results was obtained.

Each sample of the contest butter has been scored three times, at intervals of one month, by experts. It is our intention to study the results of the individual analyses with the method of manufacture, the quality, and keeping quality of the butter, and to report the results later.

UNCOMPLETED WORK.

Wheat and Flour. Last year some chemical work was done on Ontario wheats. The object of the work was to determine the best milling varieties and to ascertain from the differences in composition whether some scientific basis could not be found which would make the blending of the home grown varieties of wheat more profitable. At the request of the Millers' and Bakers' Associations, the Government decided to instal a milling and flour testing plant in the Chemical building. The machinery has been all purchased, but the addition to the Chemical laboratory in which it is to be placed is not completed. As the use of this plant will very much facilitate the investigation, we have postponed further work until it is installed.

Lodged Grain. On many farms throughout the Province, especially where clover occupies a prominent place in the rotation, a great deal of the cereal crops grow such a large amount of straw that they lodge, thus increasing the labor of harvesting and decreasing the value of the crop.

Last year a report was made of the composition of soils taken from where the crop of oats lodged and where it was not lodged. This year further data of this nature has been obtained. We have also determined the difference in the distribution of the nitrogen and ash constituents in the straw and grain in the lodged and unlodged crop. We have also conducted experiments with fertilizers to ascertain whether the lodging can be prevented by the increasing of the supply of ash constituents, and thus balancing the plant food available to the crop. A considerable amount of data has been accumulated, but more must be gathered before a definite conclusion can be reached. In the meantime no report will be made on the work.

Soaps. At the request of the Department of Household Science, we analysed thirteen samples of soap. The results show that some of the higher priced soaps are not of a sufficient high quality to warrant the price asked. The results of the analyses are not included in this report, as it is thought advisable to gather fuller data, and at some future time prepare a bulletin on the composition of the ordinary soaps, with notes on their use by the Department of Household Science.

Respectfully submitted,

R. HARCOURT.

DECEMBER 4th, 1906.

THE LECTURER IN CHEMISTRY AND GEOLOGY.

To the President of the Ontario Agricultural College:

SIR,—I beg to submit herewith a brief report of my work for the year 1906.

During the first four months of this year, my time was almost wholly occupied in teaching. To ensure thoroughness in the work of elementary Inorganic Chemistry, the first year students of the regular course perform the experiments for themselves, under my direction. This course of laboratory work is supplemented by lectures, in which the experiments are reviewed, observations made regarding the properties of the elements and compounds, and accurate conclusions pointed out. In this my endeavor has been, to make the work as interesting as possible by drawing the attention of the students to the practical application of the science of Chemistry to Agriculture.

In the Third Year, students proceeding to the examination for the B.S.A. degree are given a more advanced course of lectures in Inorganic and Physical Chemistry. To supplement lectures in this branch, the students are given a four months' course of laboratory practice in Qualitative Analyses, in which the principles underlying the grouping and separation of the metals are studied carefully.

The Chemistry taught the Dairy Class is of a practical nature. The object of this course is not to train men to be chemists, but to give students of the dairy industry a reading knowledge of books relating to their own line of work; to show them the reasons for the changes that occur in milk and its products; and to encourage a spirit of inquiry and thoughtfulness. As in the other courses in Chemistry, the practical work is supplemented by a course of lectures, dealing with the composition of milk, the detection of adulterants, and the use and effectiveness of preservatives, etc., etc.

The course in Geology is specially planned for the purpose of giving our students of Agriculture a practical knowledge of the origin, nature, and composition of soils. The geological history of North America is studied, and special attention is paid to the soils of the Canadian region.

INVESTIGATIONS UNDERTAKEN.

EXPERIMENTS IN ANIMAL NUTRITION.

In the realm of nature, the office of the plant is to store up energy from the sun's rays in certain complex compounds, setting oxygen free in the process; while the animal takes these compounds and utilizes the latent energy which they contain for its vital processes, the substances themselves uniting again with the oxygen from which they were separated in the plant. The compounds first break up in the cells of the body, independent of oxygen, in accordance with the laws which regulate vital phenomena and give out part of the latent energy which they contained. Then the oxygen of the air, carried by the blood to every part of the body seizes on the resulting substances, and burns them, more or less rapidly, producing a large quantity of heat to replace that which the body is constantly losing by radiation or otherwise, while the products of this burning are finally excreted from the body. A living animal, then, is constantly decomposing and oxidizing the materials of its own body. The body is thus continually suffering a loss of material. To replace this loss, as well as to supply material for further growth, is the office of the food fed to the animal.

It is obvious that so long as a country is only sparsely populated, and the needs of the people are amply supplied under a comparatively simple system of agriculture in which extended area precludes the necessity for improving methods, there would be little inducement to study the feeding of animals, or to systematize practice in regard to it. But as population increases in proportion to area, there arises the necessity for increased production over a given area. With this increased production a greater variety and a much greater quantity of home-produced stock feeds become available, and with means of transportation, various kinds of feeds are imported into the country, and the number of animals fed is very much increased. With these changes come keener competition, and, therefore, the necessity for more attention being paid to the subject of animal-feeding. Therefore, to supply feed in the most economical manner becomes of the utmost importance in the feeding of farm animals.

In England, with the object of cheapening the production, special attention has been paid to the improvement of breeds of farm animals, not only to enhance the development of the most valuable characteristics in the final product, but to secure early maturity, and thus to economize in the expenditure of food. Very little systematic work was undertaken to determine the use and adaptation of different feeds, each feeder relying largely on his own judgment. In Germany, however, much more attention was paid to the character of the food than to that of the animal, and towards the end of the eighteenth century and the beginning of the nineteenth, much time was devoted to determining the comparative values of different feeds, and tables were constructed, in which, adopting hay as the standard, it was attempted to arrange all other feeds according to their supposed value compared with that standard. The plan was to give the amount of each food which it was estimated was equivalent in food value to 100 parts of hay.

The first comprehensive tables of "hay values" were constructed by Thaer, and were published by him in 1809. These "hay values" were based partly upon the determining of the supposed constituents of the different foods, and partly on direct feeding experiments.

About 1830 Boussingault commenced his investigations. While Thaer looked at the question of the feeding of farm animals almost exclusively from the practical point of view, Boussingault studied it mainly from the standpoint of the chemist; though he, at the same time made direct experiments with farm animals, and so arranged and conducted them as to supply data which might serve both for the explanation and for the improvement of agricultural practice.

Thus, besides contributing much towards a better knowledge of the actual and comparative value of different foods, he investigated the question whether animals either availed themselves of the free nitrogen of the air as a source of some of their nitrogen, or eliminated either free or combined nitrogen by the lungs or skin; also whether the fat stored up by the fattening animal was exclusively derived from the already formed fat of the food, or whether it was produced within the body from other constituents of the food.

The first great advance made by Boussingault was, however, to determine the nitrogen in a large number of different foods; and taking the amount of it for the time being as a best measure of nutritive value, on this basis to compare them with hay. That is to say, supposing 100 parts of average good hay to contain a certain amount of nitrogen, how much of each of the other foods would be required to supply the same amount of it. Further, he

selected a few typical articles of food for comparative feeding experiments, so as to be able to compare the results obtained both with those indicated by theory according to their contents of nitrogen, and with the estimates of others founded chiefly on somewhat similar practical trials.

He brought together in a table the estimates of the value compared with 100 parts of hay, seventy-six different articles of food according to the amount of nitrogen he found in them; and side by side he gave the hay value of the foods according to the published estimates of others, and to the results of his own practical determinations.

Later on Boussingault pointed out that what was still wanting was the determination of the amount of the various non-nitrogenous constituents also, and of how much of them was digestible and how much indigestible. Eventually he determined in ninety different food stuffs, not only the nitrogen, but the mineral matter, the woody fibre or cellulose, the fatty matter and the remaining non-nitrogenous matter, which he recorded as starch, sugar, and allied bodies. These results he arranged in tables, and then showed the amount of each food required to contribute the same quantity of nitrogenous substances as 100 parts of hay. In 1842 Luby published his work entitled "Chemistry in its Application to Physiology and Pathology." In it he treated of food in its relations to the various demands of the animal body. He was impressed, as was Boussingault, with the fact that nitrogenous constituents were both essential and characteristic of the animal body, and that they must, therefore, be supplied in the food consumed. He also concluded that the comparative values of food stuffs were, as a rule, measurable by their richness in nitrogen.

The importance of the nitrogenous compounds in the food makes the metabolism of nitrogen one of the most essential processes of nutrition. In all metabolism experiments, therefore, the determination of nitrogen is of fundamental importance. It is commonly assumed that where the nitrogen balance is measured by the determinations of nitrogen in the food and drink on the one hand and the excretions of the kidneys and intestines on the other, an accurate balance of the income and outgo is obtained. It has, however, been claimed that some of the excretory nitrogen leaves the body in the form of gas, that is, that some of the nitrogenous material of the food or of the body substance may be so decomposed in the body that nitrogen is liberated and leaves the body in the free state.

As the study of metabolism has advanced, these two opinions regarding the excretion of nitrogen have been bitterly fought for by their defenders. Voit and his followers of the Munich school have sought to prove that practically all excreted nitrogen leaves the body in the urine and feces; Seegen of Vienna and others have, on the other hand, insisted that considerable nitrogen may be excreted in the form of gaseous products.

Voit claimed that if the organism is in nitrogen equilibrium, exactly as much nitrogen is excreted in the urine and feces as is consumed in the food, provided the animal does not gain or lose in weight. There is no chance for an excretion of nitrogen in the gaseous respiration products. The discrepancies between income and outgo are attributed to unavoidable errors in experimental methods. That this reasoning may be depended upon, the balance of mineral matter, sulphur, and phosphorus would seem to prove, since in these cases there would manifestly be no question of gaseous excretion.

Seegen believed that when a discrepancy occurred between the consumed nitrogen and that excreted in the urine and feces, it was due to a gaseous excretion of nitrogen and not to errors in methods.

Some of the very early investigators, among others Regnault, Resait and Boussingault, claimed to find proof of a gaseous excretion of nitrogen. This nitrogen did not make any great impression on the experimenters or others at the time, but gained prominence many years later when all metabolism work was being examined to prove or disapprove a theory. Voit points out many probable sources of error which were not understood and guarded against at the time these experiments were made.

In the spring of 1868 or 1869 Voit went to Vienna and worked with Seegen for several weeks. Experiments were made with dogs. Voit collected the excreta directly, and succeeded in obtaining uniform daily results. Seegen's results showed considerable daily variation. It seemed as though Voit had finally settled the controversy and shown that Seegen's conclusions were based on errors due largely to the fact that he had not collected all the urine. Seegen, however, was not convinced, yet the fact remains that Voit got more uniform results, and uniformity of results is an important factor. If there is a discrepancy in the nitrogen balance due to respiratory excretions, it should be nearly the same for each day, provided the food and other experimental conditions are constant. Since that time a vast number of experiments, chiefly with dogs, have been made by Voit in conjunction with Bischoff and later with Pettenkoffer.

A consideration of the work as a whole brings out two principal points:

(1) Before analytical methods were perfected a considerable discrepancy between the nitrogen consumed and that excreted was usually found. It was often too great to be accounted for on the ground of a gain in weight of the subject. The discrepancies were, however, not at all regular, and as methods have been perfected the amount has decreased.

(2) In a considerable number of respiration experiments a gain of nitrogen, which was believed to come from gaseous respiratory products, was found in the respired air. Improved methods have greatly diminished the amount, and it is believed that errors in method or observation are sufficient to account for the remainder.

The majority of investigators to-day share Voit's opinion that all metabolized nitrogen is excreted in the urine and feces. Furthermore, since the nitrogen of the feces is largely due to the undigested residue of the food, the urine may without serious error be assumed to contain practically all the metabolized nitrogen. This fact is of great importance, for if it is not correct, then all the experimenting done up to the present time is defective, and our whole theory of nutrition in so far as it is based upon inquiries in metabolism requires revision; for, on this basis, it is customary to calculate the amount of flesh that could be formed from a given amount of food. By deducting the weight of nitrogen of the urea in the urine from the weight of the food digested the difference is the amount of nitrogen that has been retained in the body and has been used in the formation of flesh.

As stated previously, Liebig and Boussingault claimed that flesh, or the nitrogenous part of the body, could only be formed from the nitrogenous part of the food fed. This has been confirmed by many experiments since that time. The question naturally arises: What laws regulate the formation of flesh?

A large part of our knowledge of the laws of the formation of flesh is due to the labors of Voit at Munich, at first in conjunction with Bischoff, and later, alone and with Pettenkoffer. These investigators have made a great number of experiments, chiefly with dogs, determining the gain and loss of flesh and the total amount of protein decomposed in the body, and to them

belongs the honor, both of having established reliable methods of investigation and of having applied them successfully to the solution of the important question of the effect of food on the gain or loss of flesh.

These laws were first studied with reference to the carnivora; but they are essentially the same for herbivora. The various species of animals differ in the food which they eat as well as in their powers of digesting certain foods; but the real nutrients, which are absorbed from the digestive system, even under the most varied systems of feeding, are always the same; and the substances once resorbed and taken up into the circulation decompose or are deposited in the body according to the same laws.

In considering the laws of flesh formation, there are two parallel processes to be distinguished. In the first place, in every living organism a certain quantity of albuminoid matter is daily destroyed in the vital process, and its nitrogen appears as urea, etc., in the urine. The amount of protein or flesh thus destroyed may vary greatly in different animals, or in the same animal at different times, but it can only cease entirely with the cessation of life, and cannot sink below a certain minimum amount without serious derangement of the vital functions. This continual and necessary process is called protein consumption. This must not be confounded with the amount consumed by the animal in its food. It denotes a very different thing.

In the second place, from a sufficient and suitable fodder more protein may be resorbed into the circulation than is needed to supply the consumption under the given circumstances, and this surplus produces a deposition of protein and becomes part of the body. Evidently, whatever decreases the protein consumption and increases the amount deposited in the tissues is so much protein gained by the body.

Voit claimed and proved by a large number of experiments that the protein of the living body exists in two forms—a comparatively stable one, which decomposes slowly, and an easily decomposed one whose amount depends on the food and which is rapidly destroyed when food is withheld. The quantity of the latter is small as compared with that of the former. Voit designates the stable protein of the body as organized protein, and considers that it makes up the mass of the organs; while the variable protein and easily decomposed quantity he calls circulatory protein.

The amount of circulatory protein in a poorly nourished body is small, not amounting in hunger in one per cent. of the weight of the organized albuminoids, but its amount is increased by an abundance of protein in the food. But be the quantity of circulatory protein large or small, the greater part of it, generally seventy to eighty per cent., is consumed in the course of twenty-four hours, and an exactly corresponding quantity of nitrogen excreted in the urine as urea, etc., while of the organized protein consumption of more than .8 per cent. is consumed. Therefore, the protein consumption of the body takes place almost wholly at the expense of the circulatory protein.

It is not always possible to distinguish accurately between the consumption and the production of albuminoids in the body; frequently the two increase or decrease simultaneously, and often one varies inversely as the other. The same amount of food may cause a loss of flesh in one case and a gain in another, and a corresponding variation will be observed in the protein consumption. This can only be explained by a difference in the previous food. Where, by an abundant supply of albuminoids, a large amount of circulatory protein has been formed in the body, a decrease of the albuminoids of the food will cause a decrease in the protein consumption, but not to an amount corresponding to the decrease of supply; the animal will lose flesh. On the

other hand, an increased supply of albuminoids will cause an increase in the protein consumption; but the increase, like the decrease in the other case, will not be proportional to the increased supply, and a gain of flesh would result.

This gain or loss of flesh does not usually continue long. Within a short time—usually two to four days—the consumption of protein in the body becomes equal to the amount supplied in the food, and no further gain or loss of flesh takes place. For example, Voit fed a dog 1,800 grams of meat per day. After equilibrium with the supply had been established he increased the amount of meat to 2,500 grams per day. The extra 700 grams caused a very rapid increase in the protein consumption till in three days they were nearly equal again. The gain of flesh would be small, for very nearly all the additional 700 grams per day was converted into circulatory protein and rapidly destroyed.

Many experiments have been made with both carnivora and herbivora, all of which have given the same results, viz.: the animal body puts itself, after a longer or shorter time, into equilibrium with whatever quantity of albuminoids it receives in the fodder above that necessary to maintain it in average condition. That is, a certain minimum quantity of albuminoids is necessary to prevent starvation of the animal. An increase of the supply above this quantity causes a slight gain of flesh for a short time, but a rapid increase in the amount of circulatory protein and consequently in protein consumption; and, finally, exactly as much nitrogen is excreted in the urine (and milk) as is taken in the food.

It will be seen, then, that it is only as the establishment of nitrogen equilibrium is retarded that any considerable amount of flesh can be formed.

A moderate supply of salt in the daily food increases the flow of the active juices in the body, and consequently, the protein consumption.

It is not advisable to give animals too much salt, as they are then inclined to drink too much water, with a resulting increase in the consumption of albumen and an increased destruction of valuable food material, especially when the excess of water is not retained in the tissues but is rapidly excreted by evaporation or in the urine.

The rapidity with which equilibrium is established varies directly as the amount of albuminoids in the food and inversely and as the amount of fat contained in the body; in general, therefore, equilibrium would be more rapidly established in the carnivora than in the herbivora.

The fat stored in the body reduces the protein consumption, and therefore favors the laying on of flesh. The absolute quantity of fat is not so important in this respect as its proportion to the flesh of the body. It has been found that with an equal quantity of flesh, the protein consumption in the body is small when the animal is fat. For this reason the laying on of flesh is most easily done by herbivora, since they are especially adapted for producing fat, and even under ordinary conditions of feeding have much more fat in their bodies than carnivora. On this account it is often possible to increase the proportions of albumen in the food of herbivora with the most satisfactory results.

The reduction of protein consumption through the addition of fat in the food is not very great. Voit found, as a result of a large number of experiments with carnivora, that it amounted to on the average of 7 per cent. of

the total consumption. With herbivora the retarding influence is not so evident because the action is hidden by the larger amount of carbohydrates they consume.

Carbohydrates have, if anything, a greater economizing influence on the protein consumption than fat. Herbivora take an enormous quantity of carbohydrates in their normal food, and on this account they require little albumen to maintain their condition, so that on a rich diet a proportion of the digested albuminoids readily remains on the body and is stored up in the organs as organized protein. A certain minimum of albuminoids, however, must be present in the food of cattle, and cannot be replaced by any other food constituent. The most important and difficult problem which the science of feeding is slowly solving is that of determining this minimum for all the purposes for which farm animals are kept, and that of fixing the necessary quantity and best proportions of nitrogenous and non-nitrogenous materials in the daily food of an animal, in order that the loss by protein consumption may be reduced to a minimum.

In America the investigation has fallen into two sub-divisions, viz., digestibility of feeding stuffs and more recently their "energy" values. The digestibility of a great number of the different coarse foods under average conditions has been determined at many of the Experiment Stations in the United States, but we find few, if any, records of the digestibility of some of the by-products from flour and cereal mills. This line of work has engaged our attention during the past two years, and is, we think, worthy of our best efforts. For it must be remembered, that only that portion of the food which is digestible is of direct use to the animal.

The following tables show the composition of the foods used in the experiments, and the digestibility of the different constituents of the food. We hope that feeders of live stock will make a careful study of such data.

Composition of Feeds used in Experiments.

	Moisture	Nitrogenous matter	Ether Extract	Crude Fibre	Nitrogen Free Extract	Ash
	%	%	%	%	%	%
Oat dust, sample I	6.69	9.78	5.74	18.16	55.13	4.50
" " " II	7.17	10.97	5.53	22.60	47.49	6.24
Pea bran, sample I	7.60	9.56	2.99	27.86	49.11	2.89
" " " II	7.93	12.00	.55	22.28	54.36	2.88
Brewer's grain	6.52	14.62	6.63	12.83	58.07	1.33
Barley dust, sample I	10.42	12.64	1.33	13.95	56.98	4.68
" " " II	9.21	14.08	1.95	9.39	61.62	3.75
Corn meal	9.21	11.63	4.83	3.25	69.53	1.55
Ground oats	8.57	11.12	3.35	11.65	60.77	4.54
Wheat bran	10.52	15.23	4.37	10.31	54.12	5.45
Dried molasses beet pulp	2.71	8.81	1.14	1.46	79.54	6.34
Green corn	77.16	1.77	.43	7.15	12.17	1.32
Field cured corn	59.18	3.14	.82	12.27	22.63	1.96
Ensilage	76.68	1.87	1.02	6.81	11.84	1.34
Oat straw	10.21	3.90	1.91	35 81	42.96	5 21
Oat hulls	8.08	2.16	.89	28.13	53.92	6.80
Corn bran	9.52	5.63	1.53	26.82	55.26	1.24
North Feed	8.15	5.00	1.89	19.59	63.07	2.30
Mixed chop	9.79	13.25	2.97	9.10	59.99	4.90
Mill feed	6.41	8.06	3.51	18.33	57 58	6.11
Clover hay	13.59	11.72	2.35	24.56	41.84	6.04

AVERAGE DIGESTIVE CO-EFFICIENTS.

Food and Animal.	Protein.	Fat.	Fibre.	Nitrogen free Extract.
Oat Hulls, Steer	51.39	92.13	59.10	83.81
Oat Dust, Sample I, Sheep	66.05	76.19	.....	76.07
" " " II, "	70.25	81.82	34.43	62.96
" " " III, Steers	64.90	73.51	30.14	61.07
Corn Meal, Sample I, "	79.81	94.80	83.92	88.48
" " " II, "	81.46	90.41	94.61	88.96
" Bran " "	52.24	67.17	25.75	68.19
Clover Hay, Sheep	70.08	52.32	31.19	66.43
North Feed, Steers	73.02	91.23	72.04	79.21
Mill Feed "	55.26	66.95	48.99	72.28
Green Corn Fodder, Steers	68.25	85.31	87.12	78.59
Field Cured Corn, "	35.89	83.85	71.29	85.85
Corn Ensilage, Steers	55.81	61.69	74.25	74.88
Oat Straw, "	36.81	74.99	41.73	70.27
Mixed Chop, "	73.27	49.63	51.04	69.44
Brewer's Grains "	77.34	95.28	52.98	72.88
Barley Dust, Sample I, Steers	60.49	86.53	41.73	52.29
" " " II, "	59.82	60.20	32.74	56.98
Ground Oats, Steers	66.83	97.20	53.22	81.09
Dried Molasses Beet Pulp, Steers	65.59	9.45	86.03	78.56
Wheat Bran, Steers	75.18	66.47	56.75	74.96
Pea Bran, Sample I, Sheep	59.33	93.54	64.16	81.80
" " " II, "	72.98	68.24	72.19	73.41

A detailed account of the experiments whereby these digestion co-efficients were obtained will be given in bulletin form.

FEEDING VALUE OF BEET PULP.

In this Province there have been few investigations made on the feeding value of beet pulp, simply for the reason that it has never been used here. In the United States, however, where the beet sugar industry has been in operation for a number of years, there has been some very valuable information gained regarding the value of beet pulp as a stock food. The pulp has been fed by our neighbors to the south for several years, and in the vicinity of some of the beet sugar factories, the raising of live stock has now become an occupation where no such business had existed previously.

Farmers are apt to underestimate the value of the pulp during the first few years of beet raising, and the practice due to such a belief results in great waste. We have on good authority the following statement of the use of beet pulp at the Michigan factories: "At the present time (1900) all the factories in operation in Michigan are giving the pulp free to the patrons of the factory. Up to this time not one per cent. of them have availed themselves of the opportunity. The pulp is now being dumped at a short distance from the factory (where it is left to decay). . . . The Bay City factory has put in a new process recently by which it proposes to dry the pulp after first mixing it with the refuse molasses of the factory. This for the present they expect to ship to Europe, there to be used as cattle food." But some of the farmers have seen their folly in losing this product and are now feeding the

pulp with profit, and at the same time are conserving the fertility of the soil.

Unless the value of beet pulp is appreciated by the growers of sugar beets in Ontario, a waste of stock food and fertility similar to that at the Michigan factories, is likely to occur. If this article will assist in preventing this wholesale loss, its purpose will be achieved.

When fresh, beet pulp has the appearance of pulped roots; it is the residue after the pulped beet has passed through the process for the extraction of sugar. It contains from 88 to 91 per cent. of water. But beet pulp is not simply the sugar beet minus its sugar content; other substances than sugar are removed. Fodder analyses of two samples of beet pulp, from the Berlin factory, and a sample of the factory portion of whole beets selected at the O. A. College give the following results:

Sample.	Per 100 pounds dry matter.			
	Ash lbs.	Protein lbs.	Crude Fibre lbs.	Nitrogen free extract lbs.
Beet pulp (unfermented)	4.47	10.43	14.35	70.75
Beet pulp (fermented)	4.08	10.02	17.99	67.91
Average	4.28	10.22	16.17	69.33
Whole Beet (factory portion)	5.68	11.46	5.28	77.98

It will be noticed that both the ash and protein content of the beet are diminished by the process of sugar extraction. It will be noticed, also, that the nitrogen free extract is diminished, while on the other hand the crude fibre has vastly increased in proportion to its dry weight. The increased content of crude fibre renders the pulp less digestible than the beet proper.

Owing to the fact that beet pulp is turned out during but a small portion of the year, much of it should be preserved in the silo so that the period of its use may be extended. In his report to the Ontario Legislature, President G. C. Creelman, who has spent some time in the State of Michigan, investigating the beet sugar industry there, says: "The pulp makes a valuable cattle food. It can be fed in the fresh state or preserved in silos. I see, however, many difficulties in the way of farmers making ensilage of beet pulp. When the pulp is fresh, it is quite moist, and consequently, heavy. In order to fill a silo, large quantities would be required, and a number of teams would have to be engaged so that the silo might be filled ready for covering in a comparatively short time; otherwise, as each load was deposited in the silo, it would turn brown and begin to decay. When the next load was deposited, a brown streak of decayed matter would be left between, and so on to the top of the silo."

When the beet pulp is made into silage, several losses occur. According to the experiments* of Maercher and of Kühn, fresh beet pulp compares with beet pulp silage as follows:

* Sach's Revue Universelle des Progres de la Fabrication du Sucre 1, 428.

Constituents.	Per Cent. Composition.			
	Maercher.		Kühn.	
	Fresh Pulp.	Pulp ensilage.	Fresh pulp.	Pulp ensilage.
Water	89.77	88.52	88.9	87.5
Dry matter	10.23	11.48	11.1	12.5
Ash	.58	1.09	.9	.9
Fat	.05	.11	.1	.1
Crude fibre	2.39	2.80	2.5	3.0
Crude protein	.89	1.07	.9	1.2
Nitrogen free extract	6.32	6.41	6.7	7.3

The per cent. composition, however, does not tell the whole truth, for "Maercher (Sucrerie Belge, Vol. II., page 464) determined that siloed pulps, in addition to losing water, also lost a considerable portion of their total dry matter. This is shown in the following statement of the analysis of pulps which were siloed for five months, in which time they lost the following percentages of the total amount placed in the silo. Thirty-seven and eight-tenths of nitrogen free extract, 25.5 of nitrogenous matter, and 29.6 of the fibre which they contained. The pulps gained, on the contrary, in fact, owing to the lactic and butyric fermentations. The losses were due to decomposition and not to extrainment in the moisture loss."

There is evidently a considerable loss in the total moisture, and this explains why, in the foregoing table, there is a gain in the percentage of the various nutrients. But this gain in per cent. would be very much greater were it not for the loss by decomposition of the various nutrients in the dry matter. The loss of silage, due to decay in the top layer, which acts as a cover for the material below, must also be taken into account. According to many experiments with various siloed foodstuffs, the digestibility of these foods is slightly lower than that of the same fodders when fed fresh. By siloing them there is a considerable loss in the feeding value of the total quantity of pulp.

In America little investigation has thus far been made regarding the per cent. of digestible nutrients contained in the pulp. It is our purpose to determine the digestion co-efficients of the different forms of beet pulp (fermented and unfermented) in order to be able to compare it with the foods mentioned in an earlier part of this report. If European digestive co-efficients are applicable to the digestibility of the nutrients in the beet pulp of America, beet pulp compares with common fodders on the basis of their digestibility as follows:

Name of Feed.	Moisture per 100 lbs. dry matter.	Digestible nutrients in 100 lbs. dry matter.				
		Protein.	Carbo-hydrates.	Ether Extract.	Total.	Nutritive ratio.
	lbs.	lbs.	lbs.	lbs.	lbs.	
Beet Pulp	900	6.44	71.76	.....	78.20	1 : 11.1
Sugar Beet	809	7.07	76.01	.....	83.08	1 : 10.75
Corn Silage	400	4.30	54.07	3.35	61.72	1 : 14.3
Mangels	733	12.08	59.34	1.10	72.52	1 : 5.0
Turnips	942	10.52	75.78	2.10	88.40	1 : 7.65
Bran	12	13.87	44.55	3.07	61.49	1 : 3.7
Clover Hay	17	8.00	42.12	2.00	52.12	1 : 5.83
Alfalfa Hay	9	12.00	43.51	1.32	56.83	1 : 3.83

The total digestible matter per 100 pounds dry matter in pulp is slightly lower than in the sugar beet itself or in turnips, but based on our analyses, it is higher than in corn silage and mangels. The nutritive ratio of the pulp is slightly narrower than that of corn silage; slightly wider than that of the sugar beet; and much wider than that of the mangel or turnip.

Let us now compare beet pulp with the feeding standards for fattening cattle and milch cows, as compiled by Henry in "Feeds and Feeding":—

	Per 1,000 pounds live weight.					
	Dry matter.	Digestible Nutrients.				
		Protein	Carbo-hydrates.	Ether Extract.	Total.	Nutritive ratio.
	lbs.	lbs.	lbs.	lbs.	lbs.	
Fattening Cattle	30	3.0	14.5	0.7	18.2	1 : 5.4
Milch Cows	32	3.3	13.0	0.8	17.1	1 : 4.5
Beet pulp (30 lbs. dry matter)	30	1.95	21 74	.....	23.69	1 : 11.1

By comparison with these feeding standards, it will be seen that beet pulp is not a well-balanced fodder. It contains less digestible protein, but more digestible carbohydrates and total digestible nutrients than the standards indicate. Furthermore, when 30 pounds of dry matter in the beet pulp is used, there is fed with it (if in the fresh state) about 270 pounds of water, or 9 pounds of water to each pound of dry matter. Warrington states that, with sheep, the normal proportion of water to the dry food is about 2 : 1, and with cattle 4 : 1. He states also that an excess of water always produces a waste of food. Beet pulp, then, contains a superabundance of water.

It is evident from its nature and composition that beet pulp is best used as a fodder, not when fed alone, nor when fed with rations with a wide nutritive ratio, but rather when fed with rations narrow in their nutritive ratio, and with a low water content. "Bran, clover, and alfalfa hay are complementary feeding stuffs to beet pulp for balancing the ration."*

A glance at the above table will show that where the digestible nutrients in beet pulp are deficient,—as in protein,—the three complementary foods are especially abundant; in the respects that the pulp is superabundant—as in water—the complementary feeds are quite different as compared with the feeding standards. By mixing these fodders in the proper proportions, the feeding standards may be readily attained. The bulky nature of the pulp, due to its watery character, and its high content of crude fibre, indicates that its best use is to serve as a food for ruminants—cattle and sheep. This statement is also borne out by the experience of practical feeders.

To the feeder, the moisture content of the pulp is not merely water; it is the beet juice, which gives the fodder a special value, when fed with a dry ration, out of all proportion to the dry matter in pulp. Pulp is a succulent food, and it is largely owing to this quality that it deserves such a prominent place in the ration. A ration composed of dry fodders is rendered more digestible by adding a reasonable quantity of pulp. Succulent foods also make rations more palatable, and hence animals will eat them more readily. By the use of the pulp, stock may be made to eat a larger quantity of cheap rough feeds. The opinion that succulent foods have a beneficial influence upon the health of the stock, and also upon the quality of the meat, has been confirmed.

*Henry, "Feeds and Feeding."

The digestible nutrients in the dry matters, therefore, do not indicate the full value of the beet pulp.

Two successful experiments in feeding beet pulp at the Cornell University Experiment Station, resulted in the following conclusions, as published in Bulletin No. 183:

"The cows as a rule ate beet pulp readily, and consumed from 50 to 100 pounds per day, in addition to the usual feed of 8 pounds of grain and 6 to 12 pounds of hay.

"The dry matter in beet pulp proved to be of equal value, pound for pound, with dry matter in corn silage.

"The milk producing value of beet pulp (90 per cent. moisture) as it comes from the factory is about one-half that of corn silage (80 per cent. moisture). Beet pulp is especially valuable as a succulent food, and where no such food is obtainable it may prove of greater comparative value than is stated above."

The results obtained by Hall Station (Germany) in its feeding tests with beet pulp indicate that with cows eighty-eight pounds of pulp per day with a uniform quantity of grain and hay caused the largest flow of milk, and with steers the same amount of pulp gave the best returns, while a larger quantity materially reduced the gain.

A summary of the results obtained at the Michigan Agricultural Experiment Station, as published in Bulletin No. 193, is as follows:

(1) "The experiments at this Station, combined with the experience of practical farmers, show that steers, milch cows and sheep are fond of beet pulp.

(2) In an experiment on the farm of A. W. Wright, when steers were fed with the object of carrying them through the winter with as little outlay as possible, and where the ration was made up of mixed hay, shredded corn stover, and grain, one lot of 30 steers had pulp while a second lot of 20 steers had the same ration of hay, stover, and grain, but no pulp. It required per day and steer with the pulp fed lot, 55 pounds of pulp, 8.5 pounds of mixed hay, 4 pounds of shredded corn stover, and 2.4 pounds of the ground grain. On this ration the steers made an average daily gain of 1.42 pounds. The lot receiving no pulp had for a daily ration 11.5 pounds of mixed hay, 8 pounds of shredded corn stover, and 2.4 pounds of grain, and made a daily gain of .684 pounds. Comparing the amounts of food consumed by each pen to produce a hundred pounds of gain, and computing from this data the value of a ton of pulp as an additional succulent fodder, the tests show that under the conditions existing, a ton of pulp, fed with the other feeds of the ration, took the place of 421.5 pounds of corn stover, 27.4 pounds of mixed hay, and 68.8 pounds of grain. Practical feeders will naturally wait for the confirmation of these figures by further experiments before basing their operations upon them.

(3) In the experiment on the farm of A. M. Todd, a herd of 20 steers of mixed breeding, and in poor condition, was divided into two lots, to one of which was given a ration of mint hay, somewhat mouldy but palatable, wheat bran or oats, and corn meal; while to the other lot was given the same ration, and beet pulp in addition. The latter lot made an average daily gain of 2.52 pounds, while the steers which had no pulp made a daily gain of 1.84 pounds. Making the computations as before to find the estimated value of a ton of pulp, we find that under the conditions existing at Pearl, a ton of pulp took the place of 244 pounds of mint hay, 32.6 pounds of wheat bran, 296 pounds of corn meal, and 27.2 pounds of oats. During the last week of

this experiment the lot of steers having no pulp were off feed and made no gains. If, for this reason, the experiment were brought to a conclusion a week earlier, the estimated value of the pulp would be reduced approximately by one-third. These figures result from a single experiment, and must, therefore, await confirmation before being taken as the statement of the Station in the matter.

(4) Where, in this last experiment, two lots of ten steers each were fed the same kind and amount of dry feed for six weeks and to the ration of one lot pulp was added, the feeding of 13.775 pounds of pulp gave an increased gain of 280 pounds.

(5) When fed to milch cows at the College with mixed hay and a grain ration of two parts of bran to one of corn, the pulp added nothing to the yield of butter fat. It increased somewhat the milk flow."

In reviewing the numerous letters of feeders and farmers reporting their experience in feeding beet pulp, we notice that in the following particulars they are all agreed:

Beet pulp is especially adapted for the dairy cow.

It is also relished by steers and sheep, and proves a valuable addition to their rations.

Beet pulp that has been frozen should be fed with caution.

The addition of the beet pulp to the ration has a healthful influence upon the animals to which it is fed.

Commercial Feeding Stuffs.

Name of Food.	Crude Protein	Moisture	Ether Extract	Crude Fibre	Ash	Nitrogen Free Extract
Ground Screenings	17.44	8.82	11.09	8.78	7.25	46.62
Ground Feed	12.94	10.11	4.78	7.79	3.48	60.90
Malt Combings	20.88	11.79	2.32	12.56	5.74	46.71
Linseed Meal	28.37	7.62	22.61	6.70	4.53	30.17
Barley	11.31	13.23	1.33	5.18	2.27	66.68
Barley Dust	9.27	10.42	1.03	13.95	4.68	60.65
Oatmeal Feed	11.65	7.04	7.82	3.42	2.81	66.76
Whole Wheat Flour	15.67	10.02	3.98	5.76	3.25	61.32
Gold Dust Corn Meal	7.47	11.52	5.37	.52	.69	79.43
Beet Pulp, unfermented	.93	89.95	.14	2.29	.37	6.32
" " fermented	1.50	88.87	.21	3.55	5.42	.45
Ground Barley	12.93	10.62	3.56	11.61	4.00	57.28
Wild Oats	8.25	9.42	5.20	18.53	2.72	55.88
National Chop	11.90	11.49	12.40	16.43	2.68	45.10
Dairy Chop	9.00	9.90	3.63	19.08	4.64	53.75
Hog Chop	8.69	11.40	3.64	12.09	3.25	60.93
Bran, adulturated, Sample No. 1	10.62	9.55	4.55	13.94	5.10	56.24
Bran, adulturated, Sample No. 2	11.50	10.20	4.61	12.87	4.80	56.02
Puritan Chick Food	12.26	8.57	7.10	5.93	6.20	59.94
Crushed Peas	22.65	12.42	3.09	6.21	2.55	53.08
Pea Meal	26.08	9.51	2.76	5.75	2.95	52.95
Sample Feed No. I	7.81	7.33	3.35	24.73	7.38	49.40
" " II	8.06	6.41	3.51	18.33	6.11	57.58
" " III	9.75	7.11	3.44	23.83	6.83	49.04
" " IV	11.31	6.27	5.43	15.29	5.01	56.69
" " V	7.38	5.68	3.17	21.76	7.63	54.38

Attention has repeatedly been called to the desirability of some official system of inspection and analysis of the feeding stuffs sold in Canada, and

which will compel the manufacturer or vendor of these products to attach to each bag or parcel a tag bearing a guarantee of the amount of protein and fat contained in the feed. This matter was discussed at some length in the Experimental report of last year, and is only here again brought forward for the reason that recent analyses have furnished an excellent illustration of the force of this contention.

During the year the materials, the composition of which are given in the table above, were forwarded to us for analysis. It is quite unnecessary to enter into any detailed discussion of the results in order to make good the point under consideration. A casual review of them with reference to the percentages of protein and fat will assure the reader that, as these are the two most important constituents of feeding stuffs, the feeding values and the market prices of these foods are not in accord.

Wheat bran is probably one of our best by-products. It contains protein, fat, ash, and soluble carbohydrates in such proportion as to make it an exceedingly valuable component of a dairy ration. We regret to say, however, that the two samples of bran analyzed were heavily adulterated by finely ground oat-hulls.

Several states of the Union have already enacted laws for the regulation of the sale of concentrated commercial feeds, and it seems to me, in view of the facts furnished by the chemical analysis of these feeds, that public opinion in Canada will not only support, but demands, legislative action on the part of the Government.

Respectfully submitted,

W. P. GAMBLE.

December 3rd, 1906.

PART VIII.

THE PROFESSOR OF VETERINARY SCIENCE.

To the President of the Ontario Agricultural College:

Sir,—I have the honor to herewith submit my annual report for the year 1905-1906.

Class Room.

The class room work has been much the same as in previous years.

First Year.—To this class during the fall term I gave a course of lectures on Veterinary Anatomy, briefly considering the anatomy of the horse and ox. When possible, we verified description by the examination of the skeleton of the horse or the living animal. During the afternoon lectures we discussed the erection of horse stables as regards site, drainage, material, ventilation, kinds, arrangement and size of stalls, floors, mangers, feed boxes, etc., also the general care of horses as regards feeding, watering, working, grooming, etc., and the care of harness, vehicles, etc. This was followed by a course in judging horses, in which we discussed the desirable characteristics of the different breeds and classes, and compared the respective merits of different animals of the same breed or class.

During the winter term I gave a course of lectures on "Veterinary Materia Medica" in which we discussed the properties, actions, uses and doses of the various drugs used for the prevention and cure of the ordinary diseases to which farm stock is subject. We also discussed the different methods of administering medicines, with the advantages and disadvantages of each.

Second Year.—The class room work for this year during the fall term consisted in a consideration of the causes, symptoms, and treatment of the ordinary diseases of and accidents to farm stock, with frequent reference to the proper care, methods of feeding, watering, etc., in order to prevent disease. During these lectures I usually have a living horse in the class room and explain the changes in general appearance caused by disease or injury. We also have specimens of diseased bone, by which we are able to explain the changes that take place during disease.

During the winter term I gave a course of lectures on "Veterinary Obstetrics," treating of the phenomena of conception, gestation and parturition; the usual causes of sterility and the means by which some of them can be removed; the diseases of both sexes due to the act of reproduction; the general hygienic treament of pregnant animals; the causes of difficult parturition with the means for their removal; the causes, symptoms, and treatment of diseases of both dam and offspring incident to and following parturition, and paid special attention to the care of the young.

During the afternoons I gave a course of lectures and demonstrations on the practical methods of handling horses and colts, securing animals for minor operations, as dissecting out tumors, lancing abcesses, dressing and stitching wounds, castrating, firing spavins, ringbones, etc., applying blisters and bandages; extracting and dressing teeth, scarifying lampas, etc. I illustrated the methods of applying bandages, stitching wounds, administering medicines, passing a probang in an ox; puncturing an ox in case of excession, bloating, etc., etc.

I also gave to this class a course in "horse judging," using for the purpose the horses at our command, borrowing some and visiting neighboring studs.

Third and Fourth Years.—With these years we continued the course in horse judging.

Special Dairy Class.—To this class I gave a short course of lectures on the causes, symptoms, and treatment of the ordinary diseases of dairy cattle.

Short Course in Stock Judging.—This course, which was held in January, was well attended, and as usual we gave a course of practical scoring and judging in the different classes and breeds of horses. In this I was ably assisted by Wm. Smith, Esq., of Columbus, Ont. I wish to take this opportunity of publicly thanking those gentlemen who so kindly supplied horses of the different classes for scoring and competition, viz.:—Messrs. Sorby, Bowman, Atchieson, McCannell, Hurley, Tovell, Stewart, Smith, and others.

Purchase of Horses.—During the winter the department purchased three Clydesdale mares, supposed to be in foal. Two of them proved to be in foal, but with one, when the period of parturition arrived, great difficulty was experienced in delivery. The foetus was deformed and malpresented with several of the joints ossified. We succeeded in effecting a delivery, but the mare died the next day. The other pregnant mare produced a good colt. Both mares have been bred and are supposed to be in foal. The addition of these mares to our stock of horses materially improves our opportunities for class room work.

Diseases and Injuries to Stock.

Horses.—We had a few cases of the ordinary diseases in horses, as colic, indigestion, wounds, influenza, laryngitis, under-run sole, lymphangitis, scratches, eczema, sore necks and shoulders, etc., but no fatal cases except the one already mentioned.

Cattle.—We had one fatal case of gangrenous mammitis, one fatal case of phrenitis and one fatal case of parturient apoplexy. We also had a few cases of indigestion, difficult parturition, retention of the placenta, sore teats, foul in feet, uterine discharge, etc., all of which recovered.

Sheep.—We had little trouble with the sheep except from injuries by dogs, from which cause several died and others had to be destroyed.

Swine.—We had little trouble with the swine and no fatalities except in newly born ones.

Respectfully submitted,

J. H. REED.

Guelph, November, 1906.

PART IX.

THE PROFESSOR OF DAIRY HUSBANDRY.

To the President of the Ontario Agricultural College:

SIR,—I beg leave to submit my sixteenth annual report of the Dairy department of the College. As usual I am under obligations to the excellent staff of assistants and instructors in the dairy for their valuable help during the year. We are also indebted to the Chemical, Bacteriological, and Farm departments for assistance at various times.

The work in the Dairy department consists of two main features—the teaching of dairying to students by means of lectures and practical work and the conducting of experiments in dairying for the benefit of the dairy industry. As the first must of necessity be very similar year after year, this part of our work does not require any lengthy report. During the fall term a course of lectures and practical work in farm dairying is given to the first year students. To the second year students a similar course is given in co-operative or factory dairy work. The specialists in dairying of the fourth year take lectures and practical work throughout the College year, although there is not much opportunity for practical work during the months of January, February and March, while the special dairy school is in session, as all of our apparatus and rooms are in use at this time by the special classes.

There were seventy-four students in attendance at the Short Courses in dairying during the year. This does not include about twenty young ladies from the Macdonald Institute who took dairying as an optional subject during the winter, nor does it include a number who came to the Dairy from time to time for some special instruction in milk-testing, or some other branch of dairying. These students usually remain for but a short time, not more than a day or two, yet they receive many lessons of value to them in their practical work on the farm, in the factory, or in the City Dairy.

Thirteen students applied for diplomas in cheese and buttermaking from the Dairy School during the past year. They have passed their examinations at the school, have sent monthly reports to the Dairy Department of the College and have been in charge of a factory for at least two years, one of which must be after taking the Dairy School Course. Their factories have been inspected by some one representing the school, or where this is not practicable we obtain a report from the owner of the factory, a buyer, or some other person in whom we have confidence. To visit each applicant would mean a heavy expense for travelling.

Name.	P.O. Address.	Diploma.
Geo. F. Agur	Jarvis, Ont.	Cheese-making.
T. D. Bathgate	Eganville, Ont.	Butter-making.
W. W. Dool	Bishop's Mills, Ont	Cheesmaking.
W. H. Friend	Columbus, Ohio	"
Miss Birdie Gilholm	Bright, Ont.	Butter-making.
H. V. Godoy	Argentine Republic	"
V. A. Hooper	Fayetteville, Ark.	Butter and Cheese.
T. Herbert Lund	George, Iowa, U.S.A.	Buttermaking.
Geo. Matheson	Shellmouth, Man.	"
Wm. J. Murphy	Hickson, Ont.	Cheese-making.
A. J. O'Hara	Rupert, Que.	Butter-making.
R. W. Stratton	Guelph	"
F. A. Whimsett	Cumberland, Ont.	Cheese-making.

EXPERIMENTS IN BUTTER-MAKING.

General Notes.

Both milk and cream are delivered to the Dairy department of the College by farmers living in the vicinity of Guelph. These are purchased at a certain rate per pound of milk fat. The price varied during the last year from 18 to 25 cents per pound of milk fat delivered at the Dairy. In the case of patrons delivering whole milk, they receive in addition to the foregoing prices, either 85 pounds skimmilk for each 100 pounds whole milk delivered, or, in case they do not wish skimmilk, they are paid ten cents per hundred pounds whole milk in addition to the usual price paid for fat. We require that all milk and cream shall be delivered sweet and of good flavor. At the beginning of the season a notice was sent to all prospective cream patrons, giving the prices for the season that would be paid for sweet cream testing not less than 25 per cent. fat. It was further stated on the notice, that all cream having over .25 per cent. acid and testing less than 25 per cent. fat would be paid for at the rate of one cent per pound fat less than the standard price. We think this notice tended to improve the quality of the cream that otherwise might have been delivered. The milk sent into the creamery is separated by means of a power separator at a temperature of 90 to 100°F. The cream drops from the cream spout of the cream separator into the supply can of a pasteurizer. The cream delivered by patrons, after weighing and sampling, is also put directly into the pasteurizer, and under ordinary circumstances the cream delivered and the ceam separated at the creamery are pasteurized at one and the same time. In special experiments the two kinds of cream are pasteurized separately.

The skimmilk is elevated to a tank in the attic by means of a pump where it is pasteurized with the exhaust steam from the engine before it is returned to the farmers. The skimmilk is divided among the patrons by means of an automatic skimmilk weigher.

From the pasteurizer, where the cream is heated to 180 to 185°F., it passes over a cold gas cooler in summer and over a water cooler during cold weather. If ripened cream butter is made, the cream runs from the cooler into a cream vat, and has about 20 per cent. culture (starter) added and is churned next day in a combined churn and worker. The butter is churned in the usual way and either put up in 28 or 56 pound boxes or in pound prints which are placed in cold storage until sold, or, in the case of experiments, until the lots were scored one to three times. As noted in the report further on, a number of lots of butter were shipped during the past season to London, England, per Messrs. Hodgson Bros. & Rowson, of Montreal. All butter was scored according to the following scale: Flavor, 45; grain, 25; color, 15; salt, 10; package, 5; total, 100. In most cases full points were allowed for "package."

During the College term, from Sept. 15th to the middle of April, it is practically impossible to do any experimental butter work as the time of the men, the machinery and most of the raw material are taken up with teaching students practical butter-making. In the month of June there is little opportunity for investigation, owing to the large number of visitors which we have during this month. In consequence of these things there is not much time during the year for actual experiments relating to butter-making. However, we are able to do some work which we trust will be of value to the creamery industry. The work would be of more scientific value if more chemical and bacteriological work were done in connection with the experi-

ments. If possible to make satisfactory arrangements, we beg leave to suggest that a chemist and a bacteriologist be appointed who would devote all their time to dairy problems. It has been suggested that we should co-operate with the Dominion Department of Agriculture—the College to furnish the laboratories and the Dominion Department the men. This is done by the U. S. Department of Agriculture at Washington, with several of the stations and colleges in dairy states and with very satisfactory results.

Butter Shipped to London, Eng., per Hodgson Bros. & Rowson, of Montreal.

Early in January of the present year, we made arrangements with one of the members of the firm of Hodgson Bros., now Hodgson Bros. & Rowson, of Montreal, to take charge of certain experimental butters which we purposed making during the season of 1906. This firm entered very heartily into the proposed arrangement and we are deeply indebted to them for their interest in the experiments and for many courtesies extended. The London, England, branch of the firm were also very kind and gave every assistance possible in carrying out the plan. It is a very difficult matter to secure attention from British firms to small lots of either cheese or butter. Their primary object in handling dairy goods from Canada, or from anywhere else, is to make profit, and there is very litle profit in handling these small lots. Our previous experience in shipping experimental butters to English markets had shown us the extreme difficulty of securing satisfactory reports from the firms who handled the goods in England. We are glad to be able to present more details this year than we have been able to get heretofore. We should have liked a few more details, especially on certain lots, but found it impossible to get them. If there were a Canadian Agent in London whose duty it would be to get information, more detailed in character than that usually sent out, it would be an advantage to all concerned. Most of the published reports are too general and not specific enough to enable the butter or cheese-makers to get at the cause of any trouble which may arise. We realize that detailed reports may be somewhat difficult to get, where there are thousands of boxes of cheese and butter coming into a market like London, weekly, yet we doubt not if the right man were on the spot he could glean information of great value to the Canadian Dairy Industry.

Plan of Experiments.

There were three main points under consideration, viz., the relative merits of butter made from sweet pasteurized cream churned without culture (starter), butter made from sweet cream pasteurized, having about 20 per cent. culture added just before churning, and butter made from ripened cream. In connection with the three main experiments there were five minor series: *(a)* Washing butter with brine and also brine and borax water; *(b)* half ounce salt added per pound of butter: *(c)* half ounce of salt and one-quarter per cent. common borax per pound of butter: *(d)* half ounce salt and one-quarter per cent. of an English butter preservative: *(e)* half ounce salt and one-quarter per cent. of a Canadian butter preservative. These five minor series of experiments were carried on in conjunction with the three main series relating to sweet cream with and without culture and ripened cream, making thirty experiments altogether on these points. Fifteen more experiments were made with the sweet and ripened cream, in which the salt was left out of *c*, *d* and *e*—preservatives only, in dry form, being used. Alto-

gether there were forty-five distinct experiments and different lots of butter made in these tests which were conducted during the months of June, July, and August, 1906. During June and July the butter was shipped weekly to Montreal. During August shipments were made every two weeks. After scoring in Montreal they were forwarded to London, England.

A brief outline of one series will probably make them all clear. Series I. related to sweet cream which was churned immediately after separating the whole milk, pasteurizing, and cooling the cream. Most of our supply of cream is separated from whole milk delivered by farmers who live about the College. A small amount of cream separated on the farms is also delivered, and this was mixed with the cream separated from whole milk, then pasteurized and cooled. From the cooler the cream was conveyed directly into a combined churn by means of a conductor. After all the cream had been pasteurized, cooled, and run into the churn, the churn was given a few revolutions to mix the cream and then it was allowed to stand about two hours.

The cream was usually about 48° to 56° F. when run into the churn from the cooler, and about 50° to 52° F. when churning began—usually after dinner. The churning was made in a combined churn in the usual way. The butter was about the size of wheat grains when the buttermilk was drawn off. After washing once with cold water, the butter in the (*a*) lots was washed a second time with either brine (common salt dissolved in water) or brine and borax water (common borax dissolved in water). One ounce of salt was dissolved in one and a half pounds water when making the brine. Brine and borax water was made by dissolving a quarter pound borax in brine for 100 pounds butter.

After draining and working the butter was packed in 56 pound boxes and placed in an ice cold storage at a temperature of about 40° F. The (*b*) lots of butter had common salt at the rate of one-half ounce of salt per pound of butter added after washing. The *c*, *d* and *e* lots were treated the same as the (*b*) lots, except that one-quarter per cent. of common borax, one-quarter per cent. of an English butter preservative, and one-quarter per cent. of a Canadian butter preservative were added to the respective lots. All lots were otherwise treated as nearly alike as possible. In most of the experiments the churnings of the respective lots were made on consecutive days, the order being reversed at each trial. In the last test of the series each lot in the main series was made from the same churning so far as possible. This will be shown later under the discussion of details.

Series 2 and 3 were made similarly to series 1, except that series 2 was made with sweet cream to which about 20 per cent. of culture had been added for about two hours before churning; and series 3 was made with cream ripened in the usual way in a cream vat for about 20 hours before churning. The acidity of the cream at the time of churning in this latter series would be about .5 per cent., reckoned as lactic acid.

Two experiments were made comparing results from cream delivered by patrons as compared with butter made from cream separated at the College Creamery on the same days as the cream was delivered. All were churned sweet.

Three lots, or churnings, were made in which the butter was put up in pound prints, enclosed in "Cartons" and shipped in 24 pound cases. One lot of each was made from sweet cream, sweet cream having 20 per cent. culture added two hours before churning, and one lot from ripened cream. All were practically saltless, having been washed in brine and borax water.

TABLE SHOWING CHIEF POINTS IN THE MANUFACTURE OF THE EXPORT BUTTER MADE AND SHIPPED TO LONDON, ENG., 1906.

No. of Churnings.	No. of 96 lb. Boxes.	Average % Fat in Cream Churned.	Average Temp. for Churning Cream.	Average No. of minutes required for Churning.	Average % Fat in Buttermilk.	Average % Acid at Churning.	Average % of moisture in Butter.	Kind of Cream from which Butter was made.
12	41	31.1	50.3°F.	20.8	.31	—	13.513	Sweet Cream
13	46	27.8	50.1°F.	23.7	.26	—	14.052	Sweet Cream + culture
11	39	30.1	51.4°F.	24.2	.26	.48	13.941	Ripened Cream
2	2	25.5	51. °F.	22	.26	—	13.552	Gathered Cream, churned sweet + 20 % culture
2	6	26.2	50.5°F.	19	.28	—	13.891	Cream separated at College Creamery and churned sweet + 20 % culture

DISCUSSION OF RESULTS IN MANUFACTURING.

The preceding table shows that the precentage of fat in the cream at the time of churning ranged from an average of 25.5 to 31.1 per cent. fat. The average churning temperature ranged from 50.1° F. for sweet cream containg about 20 per cent. culture, to 51.4° F. for the ripened cream lots. The average time required for churning varied from 19 to 24.2 minutes. Contrary to the generally accepted opinion the lots made from sweet cream required less time for churning than did those made from ripened cream. The average percentage of fat in the buttermilk tended to be somewhat higher in the lots churned from sweet cream. Two lots of sweet cream contained an exceptionally high percentage of fat in the buttermilk (over one per cent.) and are not included in the table of averages. One lot of the sweet cream containing about 20 per cent. culture had also a high fat content (.75 per cent.) in the buttermilk, and is not included in the average of results, as we were unable to explain why these high tests should have occurred in these three cases. The tendency, however, seems to be for too great a loss of fat in the buttermilk from churning sweet cream, although we have many churnings that are as exhaustive from sweet cream as from ripened.

The percentage of moisture is fairly constant in all the lots. The highest percentage of moisture in any one sample of butter was 16.19. This was made June 7th, by churning sweet cream (having about 20 per cent. culture added before churning) testing 23 per cent. fat, at a temperature of 48°. The granules of butter came in a very fine condition so that a part of the buttermilk had to be drawn off before the butter would gather. It was then churned to about the size of corn and washed with tap water at about 53° F. The butter was salted a half ounce per pound. The lowest percentage of moisture in any one sample was 11.9. This sample was made July 19th, from ripened cream and also salted a half ounce salt per pound of butter.

The granules of butter were chiefly the size of wheat and peas. Some were massed larger. After rinsing with tap water the butter was washed in water at 50° F., and afterwards worked in the usual way, being given 17 revolutions in the "Success" combined churn and worker.

The amount of salt retained by the butters washed in brine varied from .175 to .37 per cent. The lots salted half ounce salt per pound of butter ranged from 1.74 to 1.9 per cent. salt in the samples tested.

TABLE SHOWING THE AVERAGE OF THE SCORES OF THE BUTTERS AS GIVEN BY MESSRS. HODGSON BROS. & ROWSON, MONTREAL.

KIND OF BUTTER.	Flavor 45	Grain 25	Color 15	Salt 10	Package 5	Total 100	No. of Expts.	Remarks.
Sweet Cream washed in brine	44	24.5	14.5	10	5	98.5	2	
" " + 20 % culture washed in brine	43	25	14	10	5	97.	2	Color trifle high.
Ripe Cream washed in brine	43.5	24	14	10	5	96.5	2	
Average of lots washed in brine	43.5	24.5	14.1	10	5	97.3	6	
Sweet Cream washed in brine and borax	44	24	15	10	5	98	1	
Sweet Cream + 20 % culture washed in brine and borax	43	25	15	10	5	98	1	
Ripe Cream washed in brine and borax	44	24	14	10	5	97	1	
Average of lots " " "	43.6	24.3	14.6	10	5	97.6	3	
Sweet Cream salted ½ oz. per lb.	41.5	24.3	13	9.3	5	93.3	3	
Sweet Cream + 20 % culture ½ oz. per lb.	42.6	24	13	9.3	5	93.3	3	
Ripe Cream salted ½ oz. per lb.	40.3	22	13	9.6	5	90	3	Heated flavor
Average lots salted ½ oz. per lb.	41.5	23.4	13	9.4	5	92.2	9	
Sweet Cream, ½ oz. salt, ¼ % borax	40	24	11.5	9.5	5	90	2	Two colors
Sweet Cream and 20 % cultnre, ½ oz. salt, ¼ % borax	40.5	24.5	12.5	9.5	5	92	2	
Ripe Cream, ½ oz. salt, ¼ % borax	43	23.5	13.5	9.5	6	95.5	2	
Average of lots salted ½ oz, salt and ¼ % borax	41.1	24	12.5	9.5	5	92.8	6	
Sweet Cream, ½ oz. salt and ¼ % (1) Eng. P.	40.	23.5	11	9.5	5	89	2	Cloudy, off flavor
Sweet Cream, + 20 % culture, ½ oz. salt and ¼ % Eng. P.	41.	24.5	12	10	5	92.5	2	
Ripe Cream, ½ oz. salt and ¼ % Eng. P.	42.5	23	12.5	9	5	92	2	Cloudy, flavor fair
Average of lots ½ oz. salt and ¼ % Eng. P.	41.1	23.6	11.8	9.5	5	91.1	6	
Sweet Cream, ½ oz. salt and ¼ % (2) Can. P.	43	24.5	12.5	9.5	5	94.5	2	Trifle cloudy
Sweet Cream, + 20 % culture, ½ oz. salt and ¼ % Can. P.	42.5	24.5	12	10	5	94	2	Cloudy
Ripe Cream, ½ oz. salt and ¼ % Can. P.	42	22.5	12.5	9	5	91	2	Cloudy, flavor greasy
Average of lots ½ oz. salt and ¼ % Can. P.	42.5	23.8	12.3	9.5	5	93.1	6	
Average of Sweet and Ripened Cream with ¼ % borax only	43	24	15	10	5	97	3	
Average of Sweet and Ripened Cream ¼ % (1) Eng. P. only	43	24.3	15	10	5	97.3	3	
Average of Sweet and Ripened Cream with ¼ % (2) Can. P. only	43	24.3	15	10	5	97.3	3	
Average of all lots from Sweet Cream	42.2	24.1	13.6	9.6	5	94.7	15	
Average of all lots from Sweet Cream + 20 % culture	42.5	24.6	13.7	9.9	5	94.5	15	
Average of all Ripened Cream	42.8	22.4	13.8	9.7	5	94.8	15	
Average of Gathered Cream lots churned sweet, washed in brine and borax water	41.5	24	14	10	5	94.5	2	
Average of lots made from cream separated at College Creamery, churned sweet, washed in brine and borax water	41.5	24	14	10		94.5	2	

Discussion of the Results in Quality of Butter.

The preceding table gives the results of the scoring of the different lots of butter by the Montreal firm to whom the lots were sent and by whom they were forwarded to London, England.

The two lots made from sweet cream without any culture and in which the butter was washed in brine had the highest average total score, viz., 98.5 points out of 100. One of these lots was made in the month of June and one in August. The next highest average score of 98 was given to each of two lots—one made from sweet cream without culture and having the butter washed in brine and borax water, and the other made similarly except that about 20 per cent. culture was added to the cream before churning.

The lowest average total score (89) was given to two lots made from sweet cream having no culture and the butter of which was salted a half ounce per pound of butter and to which was also added a quarter per cent. of an English preservative. The second lowest average score (90) was also made from sweet cream, butter salted a half ounce per pound of butter and to which a quarter per cent. borax was also added. The third lowest average total score (91) was given to two lots made from ripened cream, salted a half ounce and containing a quarter per cent. of a Canadian preservative.

When we group the results from all three kinds of cream (sweet, sweet plus 20 per cent. culture, and ripened cream), we find that the lots made "saltless" by washing the butter in brine and borax water have the highest average total score, 97.6. The three lots—washed with brine only, lots in which one-quarter per cent. English preservative, and lots with one-quarter per cent. Canadian preservative—are equal and stand second with an average score of 97.3; while the lots with borax only are a close fourth, with an average score of 97.

When the scores from all the lots made from ripened cream are averaged we find the total points out of 100 to be 94.8. The lots made from sweet cream without culture score an average of 94.7 and those from sweet cream containing about 20 per cent. culture score 94.5. The average score of the two lots made July 30th and 31st from gathered cream was 94.5 and exactly the same total was given to similar lots made from cream separated from whole milk on the same dates at the College Creamery. It must be understood that the cream which was collected from the patrons of the College Creamery was delivered in a sweet condition and usually of good flavor. Samples of these lots were kept in the College refrigerator at a temperature of about 40°F. until October 13th, when it was found that the butter from the cream separated at the Creamery had held its flavor better than that made from cream collected from patrons. There was less of the "cheesy" flavor on the butter made from whole milk separated at our Creamery as compared with that made from gathered cream.

The results of the scorings previously given show the condition of the butter as it reached Montreal. After inspection at this port it was forwarded to London, England. We have detailed scorings for but two shipments after reaching London. One shipment consisted of three churnings, made July 24th, 25th, and 26th, from ripened cream in which one-half ounce salt per pound of butter and one-quarter per cent. each of borax, English preservative and Canadian preservative were used in the respective lots. All three lots wore given a score of 99 points each. The lot with salt and borax scored 45 for flavor and 24 for grain. The other two lots were given 44 each for flavor and 25 for grain. They were all given full points in the other qualities.

The second shipment, of which we received a full report from London, was a mixed lot sent out August 24th from Guelph, and consisted of churnings made August 10th, 11th, 20th, 21st, 22nd and 23rd, from sweet cream, sweet cream containing 20 per cent. culture and ripened cream. Contained in the shipment were sample boxes of butter made with brine, salt, borax, English and Canadian preservatives. All the lots scored from 97 to 100 points. Nine out of the fourteen lots scored perfection or 100. Fifteen lots were sent, but the report on one lot was lacking. In a written report the London firm states: "We find them all of very fine quality, and are pleased to say that one box only shows any trace of mould." The box reported as "mouldy" was made August 22nd from sweet cream, the butter having been washed in brine and no further salt added.

Further Extracts from Correspondence with the London Firm.

London, Aug. 1st, 1906.

"O. A. C. Butters."

"We have carefully examined the 16 boxes, R 98 ex S/S 'Hurona' and find them all in perfect condition, and all fine in quality. The unsalted marked 9/26 (made from sweet cream and 20% culture, butter washed in brine and borax water) are particularly fine and show up better than any of the others. Those marked 30/6 (made from sweet cream without culture, salted ½ oz. and having ¼% Canadian preservative) are the cleanest and sweetest of the salted."

Signed, Rowson, Hodgson & Co., Ltd.,

London, Aug. 17th, 1906.

"Our customer who bought these three lots has promised to give us some detailed account of the quality, but as far as we can see they are uniformly good of the salted and unsalted and it would puzzle us to make a special report on them, because they seem to be everything that we could wish for, and our buyer said practically the same thing on examination here."

Signed, Rowson, Hodgson & Co., Ltd.,

London, Sept. 7th, 1906.

"As requested by you we have examined the O. A. C. Butters and have also tested their keeping qualities and herewith furnish you with our report: Salted, 7/24, 7/25, and 7/26 (made July 24, 25 and 26th, from ripened cream) we find very fine butters and their keeping qualities excellent. We have broken them up and exposed them for ten days to a temperature of from 72° to 78°F., and find not the least trace of rancidity. The saltless butters are also very fine in flavor and texture, but Nos. 7/30a, 7/30b and 8/30a (made respectively from gathered cream churned sweet and with culture and washed in brine and borax water; separator cream treated the same; and gathered cream churned sweet without culture and washed in brine and borax water) are lacking in aroma and all showing both red and blue mould, chiefly the latter, which is a grave fault and would become very serious should the butters be stored for a few weeks, especially in the case of 1 lb. prints, as each pound is showing mould. We do not think 1 lb. prints are suitable for our markets as the larger surface exposed to the air tends to deteriorate the quality of the butter, and we have found both New Zealand and Australian butters which have been sent over in pounds are generally more or less out of condition on the outside. We believe we have bought and handled all or nearly all of the O. A. C. butter and have invariably found them very fine, and until this last consignment (shipped from Guelph Aug. 19th) have found no trace of mould in the saltless and no fishiness in the salted"

Signed, Rowson, Hodgson & Co., Ltd.,

The foregoing extracts will give a fair idea as to how the different lots of butter were received on the London market. As previously stated, the pound prints were made from the lots of cream on August 4th, 8th and 9th, and were shipped from Guelph on August 10th. One lot was made from

sweet cream, one from sweet cream containing about 20 per cent. culture, and one lot from ripened cream. All were saltless or practically so, as the butter was washed in brine and borax water and no further salt was added. So far as our reports indicate there was no difference in the quality of the butter on arrival, as they all appeared slightly rancid and showed some mould.

The Financial Results.

The chief object of the experiments was not to obtain a financial profit, yet we were anxious to see how the returns would compare with prices obtained in our local markets. We need also to bear in mind that each shipment consisted of from three to as many as fifteen different kinds of butter. The weight of each shipment varied from 11 boxes (616 pounds) to 22 boxes (1,232 pounds) which is a very small amount to ship so far. In consequence of the smallness of the shipments, the transportation and commission charges are likely greater than would ordinarily occur in shipping butter to the English markets. Altogether there were nine shipments made, totalling 8,128 pounds, or an average of 903 pounds per shipment. There was received net for these shipments $1,645.70, or an average of 20.2 cents per pound. In the case of two of the shipments there were special charges made which would not ordinarily occur.

The following table shows the statement of moneys received and expenses in connection with each shipment during the season:—

Financial Data *re* Shipments of Butter to London, Eng., per Hodgson Bros. & Rowson, Montreal.

Date of pment.	No. of Boxes.	Butter.	Price per 112 lbs. at which Butter sold in England.	Transportation and Commission Charges	Net amount received for shipment.	Net price received per lb. Butter.
		lbs.				c.
June 15	22	1232	106 shillings	$38.96	$240.47	19.5
" 22	16	896	106 "	27.83	175.41	19.5
" 29	16	896	108 "	27.29	179.52	20
July 6	16	896	110 "	27.51	187.60	20.9
" 13	14	784	110 "	23.85	160.15	20.4
" 20	12	672	110 "	20.16	137.15	20.4
" 27	11	616	112 "	24.15	122.78(1)	20
Aug. 10	{ 19 (24 lb.) } { 11 (56 lb.) }	1072	114 "	38.38	221.90	20.7
" 24	19	1064	116 "	32.64	220.72(2)	20.8

(1) Extra claim of £1 for insurance on previous shipment charged to this lot.
(2) Fee of $10.12 paid for inspecting and reporting on this lot.

Conclusions.

1. The sweet cream butter, both with and without culture added, churned in less time than did the ripened cream, although the churning temperature averaged about one degree lower for the sweet cream.

2. The percentage of fat in the buttermilk tended to run somewhat higher from the cream churned sweet as compared with that from ripened cream. On three occasions it was exceptionally high, but these results were not included in the table of averages because they were so abnormal. Butter-

makers who follow the plan of churning sweet, pasteurized cream need to be very watchful else an excessive loss of fat in the buttermilk will be the result. The temperature of the cream should not be above 50°F. when commencing to churn and the percentage of fat in the cream ought not to be more than about 25.

3. The average percentage of moisture in the butter was fairly constant, averaging 13.789 per cent. for the different groups. The lowest average percentage of moisture in any one series was 13.513 made from sweet cream. The highest average, 14.052 per cent., was in the series made from sweet cream containing about 20 per cent. culture added about two hours before churning.

4. The saltless butters received the highest scores for quality, and seemed to suit both the Montreal judges and the judges in London, England, better than did the salted. This may have been due to the salt we were using. In one of their letters the London firm say, "the samples of salted have an unpleasant flavor, which may be due to bad salt."

5. There appeared to be little difference in the quality of the butter made from cream churned sweet (with and without culture) and that made from cream ripened in the usual way.

6. There was little or no difference in the quality of the butter, as shown by the scores of the Montreal judges and as shown in reports from London, whether common borax, English or Canadian preservatives were used, both in addition to and without common salt. It would seem as if common borax is as effective as the more expensive butter preservatives commonly sold. The saltless butters made by washing the butter in brine and borax water obtained the highest average scores, though there was not much difference between the results of this and the other methods followed in making saltless butter.

7. The gathered cream lots of butter appeared to be equally as good as those made from cream separated at the creamery in the two trials made. However, there were scarcely a sufficient number of these to make a thorough test.

8. Shipping butter in pound prints to the British market is not likely to prove profitable—1. Because the English merchant seems to prefer having his own brand on such butter; 2. There is a tendency to "sideyness," or rancidity on the outside of prints before they can be sold to the consumer; and 3. Because the extra expense for packages as compared with 56 pound boxes is not likely to be recouped in the price obtained.

9. The financial returns, on the average, were not so good from the lots exported as from butter sold on the local markets. However, our local markets, especially in summer, are easily glutted, hence we must seek an outlet for our surplus. The best outlet at present available for Ontario creamerymen is the British market.

Effect of Different Methods of Increasing the Moisture Content of Butter, Compared with the Moisture Content in Regular Make.

Last year we reported on one method which had been suggested as a means for increasing the moisture content of butter. Briefly, the method followed last year was to take from a large churning about 35 to 50 pounds

of butter, and after placing this in a smaller churn (small "Simplex") it was washed, drained, salted and worked in the usual way. Another similar-sized lot from the same churning was washed by having a stream of cold water playing on the butter while it was being worked in the small combined churn and worker. The chief object of the experiment was to determine whether or not this method increased the moisture content of the butter. The results are indicated by a quotation from our last report: "The average percentage of moisture in the normal samples of butter was 12.925. The range was from 12 to 13.6 per cent. The samples treated by washing while the worker was in motion averaged 12.664 per cent. moisture. The range was from 11.4 to 13.6 per cent."

"Under the conditions given there was no increase in the moisture content or yield of finished butter as the result of allowing water to run on the butter while the rollers for working were in motion in the 'Simplex' churn." (O.A.C. report, 1905, p. 114.)

As the experiments referred to in last year's annual report were limited in number, five only, and the conditions not exactly the same as are found in ordinary churning, because small quantities of butter were transferred from a large churning to a small churn, it was planned during 1906 to conduct further investigations into the question of the effect of different methods of churning and handling butter, on its moisture content.

The work on this question began March 21st and concluded May 31st, 1906. During this time sixty-eight different lots of butter were made in order to test the effect of different methods. Not all these tests are reported upon, because all were not satisfactory. In any line of investigation a certain number of the experiments or tests are likely to prove unsatisfactory and cannot be used in making a summary of the work. Part of the work was done under the supervision of Messrs. Waddell and McDougall, Instructors in the Dairy School, and also Instructors among the factories during the summer season of 1906. Most of the work, however, was done by Messrs. Stratton and Taylor, who are employed as Instructors in the Dairy School during the winter and who have charge of the College Creamery during the summer.

The usual plan was to thoroughly mix a vat or vats of cream, then divide the cream into two, three or four lots, which were in most cases churned in a "Simplex" churn. The method of churning varied with each lot of cream. In a few cases the "Success" churn was used. After churning, washing, salting and working, samples were taken and sent to the chemical laboratory for moisture, salt and curd determinations. Samples were also marked for scoring, after which they were placed in an ice refrigerator at a temperature of about 40° F. These samples were judged by number on May 28th, June 14th, June 30th, and Oct. 13th, 1906. The judge knew the lots by numbers, only, and could not know the method of making at the time he was scoring.

During March and April a great deal of the work was preliminary. Beginning about May 1st, the work began to be better systematized and the results more satisfactory. We have made two groupings of the churning results—one including all the satisfactory experiments and one containing those only from May 1st. The report on the quality of the butter includes only those lots made from May 1st to 31st.

Table showing average results of the churnings from March 21st to May 31st, grouped according to ten different methods of churning and containing 63 experiments.

No. of Experiments.	Method of Churning.	Av. lbs. Cream per Churning.	Av. per cent. Fat in Cream.	Av. time of Churning.	Av. Temp. Cream at Churning.	Av. Temp. Butter Milk.	Av. per cent. Fat in Butter Milk.	Av. Temp. of Wash Water. 1st	Av. Temp. of Wash Water. 2nd	Av. No. of Revolutions of Worker.	Av. lbs. Fat in Cream per Churning.	Av. lbs. Butter per Churning.	Average per cent. Over run.	Moisture.	Salt.	Curd.
16	Regular Butter Granules about size of wheat, temp. wash water above 50° F.	255.4	29	Min 23.1	Deg F. 52.7	Deg F. 54.3	.148	Deg F. 53.3	Deg F. 53	13.5	69.55	83.2	19.6	13.142	2.463	.637
2	Regular, except that temp. of wash water was under 50° F.	282	26	44	47.5	51.5	.135	46.5	46.3	13.5	76.35	92.75	21.4	12.450	.....	.....
4	Regular, except butter was massed in wash water, temp. above 50° F.	392.2	25.8	18	52.5	54.2	.203	55.5	55.1	13.2	113.56	134.81	18.7	14.42	2.340	.471
10	Butter granules small, temp. wash water above 50° F., washed with rollers in motion	228.5	29.4	22.5	52.9	54.7	.150	52.8	53.2	13	66.95	80.57	20.3	13.96	2.982	.666
6	Butter granules uneven, massed in wash water at temp. above 50° F.	362.8	29.4	31.3	50.5	52.7	.118	53.7	53.7	15	97	112.6	16	12.828	2.040	.645
4	Butter granules uneven, washed with rollers, temp. wash water above 50° F.	200	30.3	26.7	51.2	53.8	.131	56.2	57	12.5	59.2	71.3	20.3	13.120	3.740	.684
7	Butter massed in buttermilk, wash water above 50° F.	232.3	30.3	26	53	54	.123	53	53.1	13.4	70.7	83.7	18.4	12.62	2.850	.690
10	Butter massed in buttermilk, washed with rollers in motion, temp. wash water above 50° F.	264.9	28.8	24.2	52.4	54.5	.174	54.3	54.6	12.4	76.38	92.3	20.8	13.44	2.990	.644
3	Regular, except for light working...	220	30.1	24.3	52.1	53.8	.126	53.6	54	9	66.4	78.91	18.8	12.90	2.530	.621
1	Regular, except butter was washed in brine and borax water.....	240	28.5	18	55.5	57	.130	51	51.5	13	68.4	80.50	17.6	15.22	.200	.701

Discussion of Results Obtained from March 21st to May 31st, 1906.

The chief points to notice in the foregoing table are the effects of the ten methods of churning on the "overrun," "moisture," "salt," and "curd" in butter. In the first group, wherein our regular method was followed of churning the butter to about the size of wheat granules, drawing the buttermilk, rinsing off the butter with tap water to remove the buttermilk clinging to the grains of butter, washing the butter once or twice with water at about 50 degrees to 55 degrees F., then salting at the rate of $\frac{3}{4}$ ounce of salt per pound of butter and working 13 or 14 revolutions of the worker, we find that the percentage of "overrun" (butter in excess of fat in the cream) in individual churnings varied from 16.27 to 21.3, and averaged 19.6 for sixteen experiments. The percentage of moisture in the butter varied from 11.83 to 14.81, and averaged 13.142. The percentage of salt in the butter varied from 1.74 to 3.31, and averaged 2.463. The percentage of curd varied from .529, to .715, and averaged .637. It will be noticed that the percentage of curd is fairly uniform in all the butters from the various methods of churning.

The highest "overrun" is in the second group, viz., churning in the regular way and washing with water at a temperature under 50 degrees F., but as there are only two experiments in this group it may be well not to lay too much stress upon the results. The same applies to the last two groups, viz., "light working" and "washing in brine and borax water."

Leaving out of consideration those groups where the number of experiments in a group is under ten, we find that the group where the butter was massed in the buttermilk and washed, having the rollers in motion, with water at a temperature above 50 degrees, in some cases as high as 60 degrees, contained an overrun which varied in individual churnings from 19.47 to 21.52 and averaged 20.8—the highest of any of the larger groups. The per cent. of moisture in the butter of individual churnings varied from 11.19 to 15.5 and averaged 13.44.

Three other groups contain a higher average per cent. of moisture in the butter, indicating that the "overrun" does not depend altogether upon "moisture in the butter."

TABLE SHOWING VARIATION IN SINGLE CHURNINGS, ALSO AVERAGES FOR GROUPS, IN THE OVERRUN, MOISTURE, SALT AND CURD, IN MOISTURE EXPERIMENTS, MAY 1ST TO 31ST, 1906.

Method of Manufacture	Date	No. of Sample	Lbs. Butter per Churning	% Overrun	% Water	% Salt	% Curd
Group 1							
Regular Method	May 1	30	69.25	18.53	13.08	1.74	.676
" "	" 3	33	69.82	18.80	12.40	2.21	.638
" "	" 5	36	90.25	17.97	12.29	2.56	.689
" "	" 7	39	80.00	16.27	11.83	2.39	.650
" "	" 8	40	77.75	17.80	12.48	2.60	.689
" "	" 12	45	86.00	21.30	12.55	2.38	.529
" "	" 15	47	73.75	18.28	13.93	3.05	.701
" "	" 17	50	65.25	18.63	13.40	1.92	.567
" "	" 19	56	69.50	18.19	12.95	1.65	.618
" "	" 22	59	81.75	18.29	13.06	2.14	.606
" "	" 29	62	83.00	21.30	14.81	3.31	.708
" "	" 31	68	89.00	20.67	13.80	3.11	.567
Average (12 Expts.)			77 94	18.83	13.05	2.42	.636
Group 2							
Overchurning in Buttermilk	May 1	32	70.00	21.52	12.78	2.38	.663
" " "	" 3	35	84.00	20.3	12.62	2.85	.663
" " "	" 29	64	82.00	20.	13.22	3.28	.740
" " "	" 31	66	89 50	21.35	14 21	3.09	.701
Average (4 Expts.)			81.37	20.79	13.20	2.90	.691
Group 3							
Overchurning and washing with rollers in motion	May 1	31	70.75	21.52	13.44	3.39	.676
" " "	" 3	34	85.00	21.70	13.33	3.89	.644
" " "	" 17	52	66.50	20.90	13.62	2.51	.542
" " "	" 19	54	70.25	19.47	13.41	2.17	.719
" " "	" 22	60	83.00	20.00	15.00	2.44	.628
Average (5 Expts.)			75.10	20.71	13.76	2.88	.643
Group 4							
Wheat Granules and washed with rollers in motion	May 5	37	92.25	20.58	13.81	3.65	.689
" " "	" 7	38	82.00	19.18	13.76	3.96	670
" " "	" 8	41	78.75	19.30	12.91	3.43	.576
" " "	" 12	43	86.25	21.69	15 00	2.80*	.663
" " "	" 15	48	74.00	18.70	15.04	2.41*	.638
" " "	" 17	51	66.50	20.90	13.85	2.26	.593
" " "	" 19	55	70.25	19.47	13.25	2.03	.676
" " "	" 22	58	83.00	20.00	13.44	2.52	.727
" " "	" 29	63	83.00	21.30	14.54	3.37	.714
" " "	" 31	67	89.75	21.69	14.00	3.39	.638
Average (10 Expts.)			80.57	20.28	13.96	2.98	.658
Group 5							
Churned to lumps in wash water	May 17	53	66.	20.00	15.14	1.97	.488
" " "	" 22	61	82.5	19.37	14.05	*2.71	.455
Average (2 Expts.)			74.25	19.68	14.59	2.34	.467

*(½ oz.)

Discussions of Churning Results Obtained in Moisture Experiments, May 1st to 31st, 1906.

In the preceding table we have five groupings of the results of the work done during the month of May, which includes thirty-three distinct experiments. In the first group, called "regular method," where the ordinary practices of the Dairy were followed, there were twelve experiments in which 935.3 pounds of butter were churned. The size of the churnings ranged from 65¼ pounds to 90¼ lbs. and averaged 77.94 lbs. of butter per churning. The percentage of "overrun" (butter made in excess of fat in the cream) varied in the single churnings from 16.27 to 21.3 per cent. and averaged 18.83 for the group.

The moisture content of the butter varied from 11.83 to 14.81, averaging 13.05 for the group. The salt in the butter varied from 1.65 to 3.05 and averaged 2.42 per cent. for the group. The curd varied from .529 to .708 and averaged .636 per cent. for the group.

The second and third groups, overchurning in the buttermilk, and overchurning combined with washing the butter having the rollers in motion (about ten revolutions of the churn were usually given) and the water above 50 degrees F. gave the highest overrun, viz., 20.7 per cent. in both cases, but as in the former grouping for the whole period of the experiments, these increased "overruns" are not associated with the highest moisture content in the butter. The last group, churned to masses in the wash water, contains the highest moisture content in the butter. However, there are only two experiments in this group, and it may not be wise to lay too much stress on this limited number of tests. As the other factors, curd and salt, which naturally influence the "overrun" are fairly constant in all the five groups, we may naturally ask what is it that made an apparent increase of nearly two per cent. in the overrun of the second and third groups as compared with the first group? At present we are unable to offer any satisfactory explanation except that it may be due to errors in sampling, but why these should all seem to point in the same direction is not satisfactorily explained with our present knowledge of the subject.

Table Showing Scores of Butter made in Moisture Experiments, May 1st to 31st, 1906.

Method of Manufacture.	Date of Making.	Date of Scoring.	Flavor 45	Grain 25	Color 15	Salt 10	Pkg. 5	Total 100
Group 1.								
Regular	May 1	May 28	40.	24.5	14.	10.	5.	93.5
		June 30	39.	25.	15.	10.	5.	94.
"	" 3	May 28	40.5	24.5	14.5	10.	5.	94.5
		June 30	37.	25.	14.5	10.	5.	89.5
"	" 5	May 28	41.	24.5	14.5	10.	5.	95.
		June 30	38.	25.	14.5	10.	5.	92.5
"	" 7	May 28	41.	24.5	14.0	10.	5.	94.5
		June 30	39.	35.	15.	10.	5.	94.
"	" 8	May 28	41.	24.5	14.5	10.	5.	95.
		June 30	40.	25.	15.	10.	5.	95.
"	" 12	May 28	41.	23.5	14.5	10.	5.	94.
		June 30	39.	25.	14.5	10.	5.	93.5
		Oct. 13	39.	25.	15.	10.	5.	94.

Method of Manufacture.	Date of Making.	Date of Scoring.	Flavor 45	Grain 25	Color 15	Salt 15	Pkg. 5	Total 100
Group 1.—(*Con.*)								
Regular	May 15	May 28	41.5	24.5	14.5	10.	5.	95.5
		June 30	38.	25.	15.	10.	5.	93.
"	" 17	May 28	42.	24.5	15.	10.	5.	96.5
		June 30	40.	25.	15.	10.	5.	95.
"	" 19	May 28	42.	24.5	14.	10.	5.	95.5
		June 30	40.	25.	13.	10.	5.	93.
"	" 22	May 28	42.	24.5	14.5	10.	5.	96.
		June 30	39.	25.	14.	10.	5.	93.
		Oct. 13	39.	25.	14.5	10.	5.	93.5
"	" 29	June 14	41.	25.	13.	10.	5.	94.
		" 30	40.	25.	15.	10.	5.	95.
"	" 31	June 14	42.	25.	13.	10.	5.	95
		" 30	41.	25.	14.5	10.	5.	95.5
Average of all			40.5	24.7	14.4	10.	5.	94.21
Group 2.								
Overchurning in Buttermilk	May 1	May 28	40.	24.	14.	10.	5.	93.
		June 30	37.	25.	14.	10.	5.	91.
" " "	" 3	May 28	40.	24.	14.5	10.	5.	93.5
		June 30	38.	25.	15.	10.	5.	93.
" " "	" 29	June 14	42.	25.	14.	10.	5.	96.
		" 30	40.	25.	14.5	10.	5.	94.5
" " "	" 31	June 14	42.	25.	14.	10.	5.	96.
		" 30	40.	25.	15.	10.	5.	95.
Average of all			39.87	24.75	14.37	10.	5.	94.
Group 3.								
Overchurning and washing with rollers in motion	May 1	May 28	40.	24.5	14.5	10.	5.	94.
		June 30	38.	25.	15.	10.	5.	93.
" " "	" 3	May 28	40.	24.	14.5	10.	5.	93.5
		June 30	39.	25.	14.5	10.	5.	93.5
" " "	" 17	May 28	41.5	24.5	14.	10.	5.	95.
		June 30	40.	25.	14.5	10.	5.	92.5
" " "	" 19	May 28	41.	24.5	15.	10.	5.	95.5
		June 30	39.	25.	15.	10.	5.	94.
" " "	" 22	May 28	42.	24.5	14.5	10.	5.	96.
		June 30	39.	25.	14.5	10.	5.	93.5
		Oct. 13	38.	25.	15.	10.	5.	93.
Average of all			39.77	24.7	14.63	10.	5.	93.95
Group 4.								
Butter, size of wheat granules and washed with rollers in motion.	May 5	May 28	40.	24.5	14.5	10.	5.	94.
		June 30	38.	25.	15.	10.	5.	93.
	" 7	May 28	41.	24.5	14.	10.	5.	94.5
		June 30	39.	25.	15.	10.	5.	94.
	" 8	May 28	41.	24.5	14.5	10.	5.	95.
		June 30	39.	25.	15.	10.	5.	94.
	" 12	May 28	41.	24.	14.5	10.	5.	94.5
		June 30	40.	25.	13.	10.	5.	93.
		Oct. 13	38.	25.	14.5	10.	5.	92.5
	" 15	May 28	41.5	24.5	14.5	10.	5.	96.5
		June 30	39.	24.5	13.	10.	5.	91.5
	" 17	May 28	42.	24.5	14.5	10.	5.	96.
		June 30	39.	25.	13.	10.	5.	92.
	" 19	May 28	41.	24.	14.5	10.	5.	94.5
		June 30	39.	25.	13.	10.	5.	92.
	" 22	May 28	42.	24.5	14.5	10.	5.	96.
		June 30	38.	25.	14.5	10.	5.	92.5
		Oct. 13	39.	25.	14.5	10.	5.	93.5
	" 29	May 28	41.	25.	14.	10.	5.	95.
		June 30	40.	25.	14.	10.	5.	94.
	" 31	May 28	42.	25	14.	10.	5.	96.
		June 30	41.	25.	14.	10.	5.	95.
Average of all			40.06	24.75	14.18	10.	5.	94.

Method of Manufacture.	Date of Making.	Date of Scoring.	Flavor 45	Grain 25	Color 15	Salt 10	Pkg. 5	Total 100
Group 5.								
Churned to lumps in wash water...	May 17...	May 28....	42.	24.5	14.5	10.	5.	96.
		June 30....	40.	25.	13.	10.	5.	93.
" " " ...	" 22...	May 28...	41.25	24 5	14.5	10.	5.	95.5
		June 30....	40.	25.	14.5	10.	5.	94.5
		Oct. 13	39.	25.	15.	10.	5.	94.
Average of all.....			40.25	24.8	14.3	10.	5.	94.6

Moisture in Butter Experiments.

The preceding table gives the results of all the scorings made in the experiments conducted from May 1st to 31st. Most of the lots were judged May 28th and June 30th. A few were scored on June 14th, and a few lots were carried through the summer to test their keeping qualities. These latter were scored Oct. 13th,—about five months after making. The object in all cases was to find the relative qualities of the butters made by the different methods when fresh, when made about one month, and after being kept for some time in a refrigerator. In all cases the samples consisted of pound prints wrapped in parchment butter paper in the usual way and designated by numbers.

In the table the average of all scores are given. Group 1, made in our regular way, scored the highest average for flavor, viz., 40.5, out of a possible 45. The average of all the first scores was 41.25; of the second scores 39.16; and of the third, 39. The average total of all the scorings for this group are 94.21 out of a possible 100.

The second group in which the butter was churned to masses in the buttermilk averaged 39.87 points for flavor. The average of first scorings was 41, and of the second 38.75. The first group lost an average of about two points in flavor during one month, while the second group lost $2\frac{1}{4}$ points. The average total score for the second group was 94.

In the third group we have overchurning and washing of the butter with the rollers in motion. The average score for flavor is 39.77. The average of first scores is 40.9 and of second scores 39. These lost 1.9 points in flavor during one month. The average total score is 93.95.

In group 4, where the butter was churned to about the size of wheat kernels, the buttermilk drawn, the butter rinsed and then washed with the rollers in motion, we find the average score for flavor to be 40.06. The first scores for flavor average 41.25, the second 39.2, and the third 38.5. The average of the total scores is 94.

Group 5, churning the butter to masses in the wash water, of which there are only two experiments, has an average score of 40.25 for flavor. The first scores averaged 41.75, the second 40, and the one lot kept until Oct. 13th, scored 39 for flavor. The total score in this group averaged 94.6 points out of a possible 100.

"Overrun" Defined.

A great deal of misconception is prevalent in the minds of butter-makers regarding what is meant by the term "overrun." With some, if at the end of the month they find that for every 100 pounds of butter made, 85 lbs. fat

delivered in milk, or cream, or both, were required, they figure that the overrun is 15 per cent., whereas it is over 17½ per cent. Some figure the "overrun" on the basis of the fat in the cream churned, which is the plan followed in these experiements, but the creamerymen operating a whole milk, or cream gathering creamery, or a combined creamery, should figure his "overrun" on the fat delivered in the milk or cream, or both, and not on the cream as churned, because there is always some fat lost in separating at the creamery. There are also certain mechanical losses due to fat lost in handling the milk, or cream, or both. When, therefore, a butter-maker says he has an "overrun" of 20, 25 or 30 per cent., we may well ask him what he means, or how he figured the "overrun." It is impossible to have more than 25 per cent. overrun and make "legal butter." Assuming that the butter contains the maximum amount of water allowed by statute, viz., 16 per cent., this leaves four per cent. for salt, curd, etc., and 80 per cent. for fat, *i.e.*, in every 100 pounds of butter so made, there are only 80 lbs. of fat. Assuming that no fat is lost in the buttermilk and that there are no mechanical losses, 80 lbs. fat in the milk or cream would make 100 lbs. butter, which is an "overrun" of 25 per cent. Makers who claim an overrun of 30 to 40 per cent. (we have heard of one case where an overrun of 50 per cent. is claimed) should look to their methods of weighing, testing, etc., as there is evidently something wrong.

Conclusions.

1. The "overrun" may vary considerably from day to day when following the same method of churning as closely as possible. On May 7th, following the regular method of butter-making, the overrun was 16.27 per cent. The next day the overrun was 17.8 per cent. following practically the same method. On May 12th, when churning the butter to wheat granules and washing with the rollers in motion the overrun was 21.7 per cent. On May 15th, following the same method the overrun was 18.7 per cent., and on the 17th it was 20.9.

On April 24th, when butter was massed in the buttermilk the overrun was 16.5 per cent.; April 25th, it was 19.1 per cent., and on May 1st the overrun was 21.5 per cent.—same method followed in all cases.

These illustrations will suffice to show the variation in the "overrun" from fat in the cream. The variation would be more, based on the fat delivered in milk or cream because more factors enter the problem to cause a variation. However, after summing up the whole question and averaging all the results there would appear to be an increased "overrun" as a result of massing the butter in the buttermilk, or washing the butter in comparatively warm water with the rollers of the combined churn and worker in motion. That this is not always the case is illustrated in the experiments of May 29th, when the regular method gave an overrun of 21.3 per cent.; washing with rollers in motion, 21.3 per cent.; and overchurning in the buttermilk, 20 per cent. The percentages of moisture in these three samples of butter were respectively 14.81, 14.54, 13.22. The percentages of salt and curd were practically the same in all three lots. To find the amount of "overrun" at our creamery on individual days, several tests were made during the season. On April 20th, there was delivered in milk and cream, 225.18 lbs. fat. From this was made 266 pounds butter in prints. The total loss of fat in the skim-milk was .9 lb. The overrun was 18.1 per cent. The overrun on April 21st was 15.5 per cent. On May 3rd the overrun from the whole milk (4,819 lbs.,

testing 3.8 per cent. fat) and cream (165 lbs., testing 21.75 per cent.) was 15.06 per cent. from the churn and 13.24 per cent. in prints. The overrun from the fat in the cream vat was 20.3 per cent. from the churn, and 18.3 per cent. in print butter.

2. The percentages of moisture, curd, and salt in the butter do not appear to bear a constant relation to the percentage of "overrun." For example, in the grouping of all the experiments we find the highest average percentage of moisture (15.22), the highest average percentage of curd (.701) and the lowest percentage of salt (.20) combined with the lowest average overrun (17.6). However, this is only one experiment. The lack of salt may also have had something to do with the results. In one of the groups a moisture content of 14.42 per cent. in the butter is associated with an "overrun" of 18.7 per cent., and in another group an average of 13.44 per cent. moisture is associated with an "overrun" of 20 per cent. In this case we have an average decrease of about one per cent. moisture in the butter associated with an average increase in the "overrun" of about two per cent. To some extent this is offset by a slight decrease in the percentages of curd and salt in the first group as compared with the second, but this is not sufficient to account for the difference in the "overrun."

During the work done in May, we find groups 2 and 3 with an "overrun" of 20.7 per cent. associated with butters having an average percentage of moisture of 13.2 and 13.76. In these cases the percentages of curd and salt are fairly uniform in both groups.

It is also true that low moisture content in the butter is sometimes associated with a low "overrun." For example, butters having an average of 12.828 per cent. moisture in one of the groups gave an average overrun of 16 per cent., but in this case the percentage of salt was rather low—2.04. The lowest average moisture content in the butters (12.45 per cent.) of any group was associated with the highest overrun (21.4 per cent.).

That it is difficult to tell by the appearance of the butter whether or not it contains an excess of moisture, is indicated by the notes of those in charge of the work. The following are a few comments selected at random from the work: May 19th, —"butter appeared dry" (13.41 per cent. moisture). Same date and butter made from similar cream—"more free moisture and in larger beads" (12.91 per cent. moisture). May 31st,—"butter appeared very dry" (14.21 per cent. moisture).

As a rule, a wash water at a temperature rather warm (58 degrees to 60 degrees F.) tended to give butter with a higher moisture content. This was not always the case. On April 20th, one churning was washed with water at a temperature of 53 degrees F. and the butter contained 14.17 per cent. moisture. A churning out of the same vat of cream and treated as nearly like the previous churning as possible, except that the temperature of the wash water was 58 degrees F., produced butter containing 11.19 per cent. moisture.

It was found that there was a tendency for the butter to be "gritty" and to have too much salt in it when adding salt at the rate of $\frac{3}{4}$ oz. per pound butter, our usual rate, if the butter were washed by having the rollers in motion. A few tests were made to see the effect of using only $\frac{1}{2}$ oz. of salt per pound of butter when washing in this way. On May 12th, using $\frac{1}{2}$ oz. salt and washing with rollers in motion the butter contained 15. per cent. moisture, 2.8 per cent. salt, and .663 per cent. curd. A churning from the same vat of cream on the same day and made in our regular way, salted $\frac{3}{4}$ oz. contained 12.55 per cent. moisture, 2.38 per cent. salt, and .529

per cent. curd. May 15th, ½ oz. salt, butter analyzed 15.04 per cent. moisture, 2.41 per cent. salt, and .638 per cent. curd. Butter made in the regular way from same vat of cream and salted ¾ oz. contained 13.93 per cent. moisture, 3.05 per cent. salt, and .701 per cent. curd. On May 17th, four churnings were made in four different ways from the same vat of cream, all salted ½ oz. The butters varied in moisture from 13.4 to 15.14 per cent. and the salt varied from 1.92 to 2.51 per cent. On May 19th, three churnings were made from the same vat of cream and all were salted ½ oz. The moisture in the butters varied from 12.95 to 13.41 per cent.; the salt varied from 1.65 to 2.17 per cent.

The conclusion from these tests would seem to be that the salt retained by the butter varies considerably, and according to chemical analysis, is not a constant factor even when salted at the same rate as nearly as possible. However, so far as taste was concerned the butters made by washing with the rollers in motion appeared to be as salt when salted at the rate of ½ oz. per pound of butter, as those made in the regular way and salted ¾ oz. per pound of butter.

3. So far as the quality of the butter is indicated by the results in scoring there was not much difference from the various methods followed, showing that a butter-maker may vary his methods considerably from what are regarded as standard rules and still be able to make a good quality of butter. However, the tendency was for "mottled" and "gritty" butter when the butter was massed in either the buttermilk or the wash water. The tendency was towards "greasy" butter when it was washed in water at too high a temperature or with the rollers in motion. We should consider there is considerable risk in following any of these plans recommended for increasing the "overrun." A butter-maker should aim to make the *finest quality of butter* rather than to see how large an "overrun" can be obtained.

EXPERIMENTS IN CHEESEMAKING.

General Notes.

The milk used for the experiments in cheesemaking is chiefly furnished by farmers who live in the neighborhood of the College, and differs very little from that usually delivered to cheese factories in the ordinary way. Sometimes the milk is bad-flavored, overripe, gassy, etc., the same as in an ordinary factory. If the milk is too bad, we return it to the patron accompanied by a courteous note of explanation and advice, if brought in by a milk hauler. If the farmer himself delivers the milk, the objectionable qualities are pointed out and a remedy suggested. Usually this results in an improvement next day. During the summer milk is delivered daily. In the spring and fall, delivery is made three and four times a week. It is usually at such times we have most trouble with the flavor of the milk and cheese

Our cheese department is equipped with three cheese vats suitable for handling 300 pounds of milk each. We also have two vats of 800 pounds capacity each and one vat with a capacity of 3,000 pounds milk. All these vats are used for the work, according to whether we have a large or small supply of milk available for cheesemaking and according to the quantity of milk required for the special experiment. The remainder of the equipment is similar to that found in an ordinary small cheese factory.

The method of cheesemaking followed is that regularly taught to our students and commonly practised in the cheeseries of Ontario. We have an ordinary "curing-room," which has a sub-earth duct connected with it. A fairly uniform temperature of 60 to 70°F. can be maintained in this room. We also have a cheese-ripening room, cooled by means of ice, where the temperature is fairly uniform at about 40°F., and two rooms in a mechanical cold storage where the temperature is about 40°F.

In experiments where the yield and quality of cheese are factors to be considered, the milk is first thoroughly mixed in a large vat, then divided into two or more equal parts by weight. So far as possible all the factors affecting yield and quality are made the same, except the special point or points under investigation. We try not to have too many points involved in any one experiment. Simple experiments, as a rule, are more satisfactory than compound ones. By compound, we mean an experiment where a large number of points are under investigation at one time and in one test. As a rule these are confusing.

All cheese are marked with a letter denoting the vat in which the cheese were made, and also with the date of manufacture, as soon as taken from the hoops. The cheese are then weighed and placed in the ripening room. At the end of one month they are again weighed. Six weeks to two months after making the cheese, they are scored by a member of the Dairy staff or some expert brought to the Dairy for the purpose. We also sent cheese to Montreal for scoring during the past season. We are indebted to Messrs. G. H. Barr, Wm. Waddell and Hodgson Bros. & Rowson for assistance in scoring. The scale of points used for judging the cheese consists of flavor 40, closeness 15, even color 15, texture 15, finish 10, total 100. All cheese are given 10 points for "finish," and where this is not shown in the results of the scoring, ten points should be added to the other points given in order to make up the total score. Nearly all the cheese are scored two or three times before being disposed of. Sometimes cheese are kept through the whole season and scored monthly. Where not otherwise stated, the results of the scores represent the average of all the scores given to all the cheese made in that particular experiment.

Details for the manufacture of the cheese in each experiment are not given because it would take up too much space. It is assumed that the persons reading the report are familiar with the processes of cheesemaking, hence do not need the ordinary details explained. Only the main points under each experiment are treated of, otherwise the report would be too lengthy for publication.

In their letter of Nov. 20th, 1906, Messrs. Hodgson Bros. & Rowson, Montreal, make the following remarks regarding the shipment of cheese sent them for scoring on Nov. 8th, from Guelph:

"We enclose you our scoring of the experimental cheese from the College. The flavor, texture, closeness and finish on the whole are excellent. We are very sorry to find that with one exception none of your cheese score full for color. This arises through nearly all the samples you sent us being a little streaky in color. We do not mean mottled, but they show the marks of the curd. This streakiness doubtless will disappear with age, but as there is almost an entire absence of this streakiness in color in the cheese we receive from Peterborough, Picton, and elsewhere, we felt no other alternative than to score them accordingly.

We must, however, congratulate you on the closeness, texture and flavor of the cheese. We consider them, with very few exceptions, exceedingly creditable."

Yours,

HODGSON BROS. & ROWSON, Limited.

Note.—The samples marked 30 for flavor have the following comments in the score card returned, "old milk flavor," "stale and slightly rancid." (See tables of scores given by Hodgson Bros.)

Mr. C. H. Ralph, a cheesemaker of several years' experience, has had direct charge of the experimental cheese work during the past year.

Rennet vs. Pepsin for Coagulating Milk in Cheesemaking.

This is the third year for experiments conducted to ascertain whether or not pepsin is a more valuable agent for coagulating milk for cheesemaking than is rennet, the commoner agent. Pepsin is obtained from the stomachs of animals and is usually sold in scales or powder form. The large packing-houses manufacture the pepsin as a by-product in their business.

To prepare pepsin for use in coagulating milk, a definite weight or quantity is dissolved in a definite volume of water. In the experiments herewith reported upon, three grams of pepsin were dissolved in eight ounces of water and this quantity was added to 300 pounds of milk. One ounce of rennet extract was added to 300 pounds of similar milk for comparison. During the past season nine experiments were made in which were used 5,400 pounds milk testing an average of 3.75 per cent. fat for the lots ripened in cold storage, and 3.67 per cent. fats for the lots ripened in the ordinary room. The average percentage of fat in the whey from both pepsin and rennet lots was .3.

The average percentage of acid in the milk at the time of adding the pepsin and rennet was .21 reckoned as lactic acid. The acidity at the time of "dipping," "milling" and "salting" was practically the same for both, viz.: .2, .5 and .7 per cent. respectively at the three different stages.

During October and November, 1905, three experiments were made in which were used 1,800 pounds milk testing 4.1 per cent fat. The whey tested .27 per cent. fat. These were not reported upon last year.

The yield of green cheese from 1,500 pounds of milk coagulated with pepsin in 1906 was 143.37 pounds. At the end of one month ripening in ice cold storage at 40°F., the weight was 139.7 lbs. The shrinkage was 2.5 per cent.

The same quantity of similar milk coagulated with rennet produced 144 pounds green and 140.23 pounds cheese after ripening one month in an ice cold storage at 40°F. The shrinkage was 2.6 per cent.

From 900 pounds milk coagulated with pepsin in the fall of 1905 the yield was 97.31 and 95.13 respectively for green and ripened cheese. From the same quantity of milk coagulated with rennet the yields were respectively 98.13 and 96 pounds green and ripened cheese. The shrinkages were 2.3 and 2.1 per cent. respectively from the pepsin and rennet lots.

Four lots of each in 1906 were ripened in an ordinary ripening (curing) room at a temperature of 60° to 70°F. The yields of cheese from 1,200 pounds of milk where pepsin was used for coagulating milk was 110.69 and 106.36 pounds green and ripened cheese respectively. From the same quantity of milk using rennet as a coagulating agent the yields were 110.56 and 106.26 of green and ripened cheese. The percentage of shrinkage was 3.9 from the pepsin lots and 3.8 from the lots coagulated with rennet.

The marketable cheese per 1,000 pounds milk for all the experiments in 1906 by using pepsin was 93.1 pounds ripening in an ice cold storage and 88.63 pounds ripening in the ordinary room. By using rennet the marketable cheese per 1,000 lbs. milk was 93.4 pounds from cold storage and 88.6 pounds from an ordinary room.

Quality of the Cheese.

(All cheese were given 10 points for "finish," and this is not included in the total.)

Kind of Cheese	Place of Ripening	Scorer	Average Scores of the Cheese				Total 100
			Flavor 40	Closeness 15	Color 15	Texture 15	
Pepsin.....	Ice Coldstorage at 40° F.	Dairy.....	36.85	14.07	14.4	18.5	93.82
Rennet	" "	"	37.	14.21	14.5	18.8	94.51
Pepsin.....	Ordi'y room 60° to 70° F.	"	36.	13.90	14.3	17.	91.20
Rennet	" "	"	36.1	14.09	14.3	18.	92.49
Pepsin.....	Ice Storage	Barr & Waddell.	37.5	14.	14.5	17.5	93.50
Rennet	" "	" " ..	38.	14.	14.5	17.5	94.
Cheese made May 25, 1906		Cheese scored Nov. 6, 1906					
Pepsin.....	" "	Barr & Waddell.	37.5	14.	14.5	17.	93.50
Rennet	" "	" " ..	38.	14.	14.5	17.5	94.
Cheese made May 25, 1906		Cheese scored Nov. 15, 1906					
Pepsin.....	" "	Hodgson Bros...	40.	15.	13.	20.	98.
Rennet	" "	" " ..	40.	15.	13.	20.	98.
Cheese made Oct. & Nov., 1905							
Pepsin.....	" "	Waddell	37.17	13.8	14.17	17.	92.1
Rennet	" "	"	37.50	13.8	14.50	17.7	93.5

Conclusions.

1. We cannot do better than quote from last year's report in which we said: "The yield of marketable cheese was slightly greater from using rennet as compared with pepsin for coagulating milk." The yields of marketable cheese per 1,000 lbs. milk were 93.1 lbs. from pepsin and 93.4 lbs. from rennet ripening in ice storage. Ripening in the ordinary room the yields were practically the same, 88.6 lbs. cheese per 1,000 lbs. milk. The percentages of shrinkages were respectively 2.5 and 2.6 using pepsin and rennet, and ripening in cold storage. Ripening in the ordinary room the shrinkages were 3.9 and 3.8 per cent. from the pepsin and rennet lots respectively.

2. The quality of the cheese was very similar from both the pepsin and rennet as shown in the table of scorings. Incidentally there is shown in the table the variation in the scores given to two lots of cheese by different judges. The lots made May 25th, 1906, were scored 93.5 and 94 points out of a possible 100 on November 6th, by Messrs. Barr and Waddell. These same cheese were shipped to Montreal that same week and the report from Messrs. Hodgson Bros. Rowson showed a scoring of 98 points each.

3. As a result of three years' work comparing rennet and pepsin as agents for coagulating milk we are not prepared to recommend pepsin in preference to rennet, chiefly because the pepsin is more difficult to prepare for addition to the milk, and there appears to be no advantage in yield or quality of cheese as a result of using the pepsin.

Extra Rennet for Cheese Ripened in Cold Storage.

This experiment has now been conducted for four years and it is probably sufficient for the present. During the season, six lots of cheese were

made by using 6 2-3 ounces of rennet per 1,000 lbs. milk and six lots were made from similar milk using rennet at the rate of 3 1-3 ounces per 1,000 lbs. milk.

The milk tested an average of 3.66 per cent. fat. The whey from both the lots of curd tested an average of .22 per cent. fat. The average acidity of the milk at the time of renneting or "setting the vat" was .206 per cent., reckoned as lactic acid, using phenol-thalein as an indicator.

The yield of cheese per 1,000 lbs. milk where rennet at the rate of 6 2-3 ounces of rennet per 1,000 lbs. milk were used, was 98.78 lbs. of green cheese and 95.45 lbs. cheese weighed at the end of one month. The shrinkage in one month ripened in an ice cold-storage at a temperature of about 40°F. was 3.3 per cent.

The yield of cheese per 1,000 lbs milk by using rennet at the rate of 3 1-3 ounces per 1,000 lbs. milk was 98.11 lbs. green cheese and 94.96 lbs. weighed at the end of one month. The shrinkage in one month was 3.2 per cent.

The quality of the cheese is indicated in the table of average scores.

Amount of Rennet per 1000lbs. Milk	Method of Ripening	Flavor 40	Closeness 15	Even Co or 15	Texture 20	Finish 10	Total 100
6⅔ oz.	Ice Cold Storage 40° F.	37.2	13.60	14.70	18.4	10	93.90
3⅓ oz.	" " "	37.5	14.07	14.86	18.7	10	95.13

Conclusions.

The results agree with those obtained in previous years, viz.: that the yield of cheese was slightly greater by using double the usual quantity of rennet. There was little difference in shrinkage or quality of cheese, what there was being in favor of the normal amount of rennet, viz.: about three ounces of rennet per 1,000 lbs. milk. For more rapid ripening in cold storage extra rennet may be used. Similar results were got in experiments made during November, 1905, and which were not reported upon last year, as the cheese were not ready to score at the the time our annual report was written.

DIFFERENT TEMPERATURES FOR COOKING CURDS.

This is the second year for systematic conducting of experiments to determine the effects of "cooking" curds to a higher temperature than that usually followed, viz., 98° to 100°F. Two experiments were made near the end of the season 1905 which were not reported upon last year. This year eight tests were made. Altogether there were used for these tests 1,200 pounds testing an average of 4.15 per cent. fat in 1905, and 7,170 lbs. milk testing an average of 3.77 per cent. fat in 1906. The average percentage of fat in the whey was .25 and .33 for the two seasons respectively. The lots made in 1905 were ripened in the ice storage. There was practically no difference in the yield of marketable cheese whether cooked to 106°F. or 99°F. in the fall of 1905. The average total score of the cheese was exactly the same for both lots as given by Mr. Waddell, viz., 90.7 points. The lots "cooked" to 106°F., had about .1 per cent. less acid at "milling" and "salting" as compared with the lots cooked to 99°F.

One-half the curds in 1906 were cooked to an average temperature of 105.4°F., and the other half to 99.6°. The percentages of acid at the time of "setting," "milling" and "salting" were respectivly .195, .50 and .651

for the curds cooked above 100°. The normal curds at these stages contained an average of .197, .577 and .761 percentages of acid. All the cheese were ripened in the ordinary ripening (curing) room at a a temperature of 60° to 70°F. The cheese were weighed when taken from the hoops, and again in one month. Scoring was done monthly.

Yield and Quality of Cheese from Cooking Curds above 100°F. vs. under 100°F.

Average Temp. for "cooking" the curds	Lbs. Cheese per 1000 lbs. milk.		Scorer	Flavor 40	Average Score for			Total 100
	Green.	Ripened.			Closeness 15	Color 15	Texture 20	
105.4° F.	103.97	100.95	Dairy	35.60	13.20	14.	16.80	89.60
99.6° F.	104.72	101.62	"	35.80	13.20	14.	17.	90.
105.4° F.			Barr & Waddell..	37.12	13.87	14.	17.37	92.36
99.6° F.			"	36.87	14.12	14.	17.	91.99
105.4° F.			Av. of all Scores....	36.27	13.50	14.	17.06	90.83
99.6° F.			"	36.27	13.61	14.	17.	90.88

Conclusions.

These are very smilar to those of last year, viz., that cooking to a temperature above 100°F. tends to check the development of acid, produces less cheese per 1,000 pounds of milk, and does not ordinarily improve the quality of the cheese. A temperature between 98° and 100°F. seems to be a very favorable one for "cooking curds" and only in exceptional cases, such as handling over-ripe milk," is it advisable to "cook" much above 100°F. In the fall of the year, when the milk is usually richer, higher temperatures for cooking curds may be used, than is advisable earlier in the season.

Moisture in Curd and Cheese.

We have pursued the policy in reference to this question which we follow in all important lines of investigation. This has been referred to in previous reports, viz., that we make a comparatively limited number of distinct experiments in one year and follow these for three to five years. We believe that results and conclusions so obtained are more valuable than those got by making a larger number of tests in a single experiment in one year, then dropping the subject. Owing to the variation in season and quality of milk from year to year it is only after averaging results from several seasons that we can arrive at correct conclusions.

Results of the fourth year tests on the amount of moisture in curds at the time of "dipping" and also in the green cheese, and the relation of this to the yield and quality of cheese follow. The method for determining the moisture is outlined in another part of my report. The remainder of the work was done along lines similar to the ordinary processes followed in Canadian Cheddar Cheesemaking, except that the curds containing an excessive amount of moisture were stirred very little at the time of "dipping" or removal of the whey.

Fourteen experiments were made during the season for which were used 11,550 pounds milk testing an average of 3.68 per cent. fat. The percentage of fat in the whey averaged .2. From 600 to 1,400 pounds milk were

thoroughly mixed in a vat and afterwards divided into two equal quantities. Rennet at the rate of 3 1-3 ounces per 1,000 lbs. milk was added and the two lots of milk were made into cheese, following exactly the same plan with each as nearly as possible, except for the variation at the time of "dipping" already noted. Part of the cheese from both lots was ripened in an ordinary ripening room for one week, then they were moved to an ice cold storage. The remainder of the cheese were ripened for the full period in the ice storage at about 40°F. The cheese were weighed when taken from the press and again when one month old. The former are referred to as "green" cheese and the latter as "ripened" cheese.

The cheese were scored for the first time when six weeks to two months old and once a month thereafter until disposed of. Some of the cheese were kept through the whole season. The scores represent the averages as given by the different persons who judged the cheese.

The yield of ripened cheese in cold storage per 1,000 lbs. milk from curds containing an excessive amount of moisture was 99.9 pounds; normal curds 99.5 pounds; shrinkage 2.8 and 2.6 per cent. respectively. The lots held in the ordinary room for a week before moving to cold storage yielded 97.2 pounds marketable cheese per 1,000 lbs. milk from curds testing about 52 1-2 per cent moisture at dipping, while the normal curds yielded 96.4 pounds per 1,000 lbs. milk. The shrinkage was 3.3 and 3.0 per cent. respectively.

Table Showing Moisture and Acidity of Curds.

	"A" Cheese containing excessive moisture	"B" Cheese containing normal moisture
	Average %	Average %
Moisture in curds at dipping	52.493	47.811
" " green cheese	35.645	35.175
Percentage acid at dipping	.198	.198
" " at milling	.632	.542
" " at salting	.853	.809

Table Showing the Quality of the Cheese.

Kind of Cheese.	Method of Ripening.	Scorer.	Average Scores for: Flavor. 40	Closeness. 15	Color. 15	Texture. 20	Total.
Excessive Moisture.	1 week ordinary room, then ice storage.	Dairy	36.5	13.8	14.7	18.2	93.2
Normal	" "	"	36.5	14.1	15.	18.7	94.3
Ex. moisture.	" "	Barr & Waddell	35.8	13.3	14.	16.5	89.6
Normal	" "	" "	36.	13.3	14.	16.5	89.8
Ex. moisture.	Ice storage	Dairy	37.75	14.	15.	18.5	95.25
Normal	" "	"	37.75	14.	15.	18.5	95.25
Ex. moisture.	" "	Barr & Waddell	36.8	14.3	14.2	17.	92.3
Normal	" "	" "	37.10	13.6	14.1	17.	91.9
Cheese made Aug. 8, 1906.							
Ex. moisture.	" "	Barr & Waddell	38.	14.5	14.5	17.5	94.5
	" "	Hodgson Bros.	40.	15.	14.	20.	99.
	" "	Barr & Waddell	37.5	13.5	14.	17.	92.
Normal	" "	Hodgson Bros.	40.	15.	14.	18.	97.

Conclusions.

1. The curds containing an excessive amount of moisture averaged 52.493 per cent. at the time of "dipping," while the normal curds averaged 47.811. The difference in the moisture of the green cheese was less than one half of one per cent. The acidity developed somewhat faster on the moist curds, as shown by the average percentages of acid at the stages of "milling" and "salting."

2. The cheese yield, with the higher percentages of moisture in the curds at dipping, was about one half pound greater per 1,000 pounds milk, which corresponds closely with the work done last year.

3. There did not appear to be very much difference in the quality of the two lots of cheese, although Messrs. Barr and Waddell and Hodgson Bros. scored the cheese made from the moist curd somewhat higher.

We consider this a very important question for practical cheesemakers to consider. The markets are demanding "fatter" cheese, which really means cheese with more moisture in them. As the moisture in cheese is the *natural* moisture of milk, there is not the same objection to it as in butter, because in the butter the moisture or water is extraneous.

Acidity of Curd at Time of Salting.

These are a continuation of the experiments made last year During 1906, 34 experiments were made. For the tests there were used 34,451 pounds milk, testing an average of 3.54 per cent. fat. The whey at the time of dipping tested an average of .218 per cent. fat. The milk from our regular delivery was run into a vat and the curd was handled in the one vat or curd sink until the first curd had sufficient acid to salt. If two cheese only (A and B) were made, the curd was equally divided by weight at this time and the second was salted about one hour after the first, at which time the second curd contained about .1 per cent. more acid than did the first one salted and nearly 4 1-2 times as much acid as the milk contained at the time of "setting."

Table Showing Results of Salting Curds at Various Stages of Acidity.

Cheese	Average % acid at Dipping	Milling	Salting	Av. time from dipping to salting	Av. lbs. cured cheese per 1000 lbs. milk	Av. per cent. shrinkage in one month.	Temp. and moisture of ripening room	Scorer	Average Score for Flavor 40	Closeness 15	Color 15	Texture 20	Total, 100
				H.M.									
A.	.210	.643	.815	2 53	93.9	2.74	40.8°F. 81.8°%	Dairy...	37.10	14 10	14.63	17.93	93.76
B.			.915	3 52	93.5	2.68	.....	"	36.83	14.12	14 56	17.98	93.46
A.	.207	.577	.740	2 35	92.3	3.12	.....	"	36.67	13.33	14.	18.	92.
B.	.....	.....	.842	3 20	92.	3.06	.....	"	37.	14.	14.33	18.	93.33
C.	.....	.....	.....	4 14	90.9	2.86	.....	"	37.	14.	14.	17.67	92.67
D.	.....	.....	.....	5 05	90.9	2.75	.....	"	37.	14.	14.5	17.5	93.
								Barr and Waddell					
A.	.....	.....	.....	2 35	.....	.....	.....	"	38.	14.25	14.25	18.5	95.
B.	.....	.....	.....	3 20	.....	.....	.....	"	38.25	14.5	14.25	18.5	95.5
C.	.....	.....	.....	4 14	.....	.....	.....	"	37.75	14.25	14.25	18.	94.25
D.	.....	.....	.....	5 05	.....	.....	.....	"	37.50	14.	14.25	18.	93.75

In a number of experiments four cheese (A, B, C, and D) were made from the same vat of milk. As it was found difficult to secure correct tests of the acidity for the third and fourth curds at the time of salting, the *time* from dipping to salting of these curds is given. On the average, each of the three last curds were salted about one hour after the preceding one. All the cheese were ripened in mechanical cold storage at an average temperature of 40.8°F. and with 81.8 per cent. moisture in the air of the ripening room.

Part of the cheese were judged by a member of the Dairy Staff and part by Messrs. Barr & Waddell. Two lots, eight cheese, scored by Barr & Waddell on November 6th, were shipped to Montreal on November 8th, where they were again scored by Hodgson Bros.

The first table shows the main points regarding the making of the cheese and the average of the scores given by the Dairy and by Messrs. Barr & Waddell for the main part of the experiments.

The second table shows the relative scores given by two sets of judges on the same cheese within a few days of each other. These show quite a wide difference in the values or scores placed upon the same cheese by different men.

By averaging the totals given by the two sets of judges we get the numbers 93.5, 93.7, 94.8 and 95.6 for the A, B, C and D lots, showing a tendency for a higher score on the two lots where the cheese were kept from one to two hours longer than usual before salting, but the yield of cheese was from one-half to over one pound less, per 1,000 pounds milk, by maturing to these later stages.

Table Showing Scores of Eight Lots of Cheese Salted at Different Stages of Acidity, and Scored by Messrs. Barr, Waddell, and Hodgson Bros.

Kind and Date of Cheese.	Scorer.	Scores given for: Flavor. 40	Closeness. 15	Even color 15	Texture. 20	Finish. 10	Total. 100
July 30, "A"	Hodgson Bros...	30	15	13	20	10	88
	Barr & Waddell.	39	14.5	14.5	18.5	10	96.5
"B" salted 1 hour later than "A".	Hodgson Bros...	30	13	13	20	10	86
	Barr & Waddell.	38.5	15	14.5	19	10	97
"C" salted 1 hour after "B"	Hodgson Bros...	30	15	13	20	10	88
	Barr & Waddell.	37.5	14.5	14.5	17.5	10	94
"D" salted 1 hour after "C"	Hodgson Bros...	38	15	15	20	10	98
	Barr & Waddell.	37	13.5	14.5	18	10	93
Sept. 10, "A"	Hodgson Bros...	38	15	13	20	10	96
	Barr & Waddell.	37	14	14	18.5	10	93.5
"B" salted 1 hour after "A".....	Hodgson Bros...	40	15	13	20	10	98
	Barr & Waddell.	38	14	14	18	10	94
"C" salted 1 hour after "B".....	Hodgson Bros...	38	15	12	18	10	93
	Barr & Waddell.	38	14	14	18.5	10	94.5
"D" salted 1 hour after "C"	Hodgson Bros...	40	15	12	20	10	97
	Barr & Waddell.	38	14.5	14	18	10	94.5

Conclusions.

1. In one series of experiments the yield of marketable cheese for 1,000 pounds of milk was lessened .4 pound by developing .1 per cent. more acid before salting as compared with curd salted in about three hours after dipping. In the second series, the yield of marketable cheese per 1,000 pounds milk was reduced 1.1 pounds by holding for about two hours after the usual time of salting. The percentage of shrinkage was, however, somewhat greater on the cheese salted at the usual time or before, viz., about three hours after dipping.

2. The results in quality of cheese are somewhat conflicting, but the tendency was for the judges to give higher scores to the cheese made from curd held for more than three hours after dipping. Whether or not this extra quality will pay for the extra loss of time in making and for the extra loss of cheesemaking material, chiefly fat, is a question which will require further work before a definite answer can be given, even if it can be given at all.

Effects of Different Temperatures on Cheese Ripening.

As intimated last year, we consider that sufficient work has been done at present on the question of the effects of various temperatures in ripening cheese. The results of several years' work may be summarized by saying, that so far as our experiments are concerned, the results indicate that the lower the practicable temperature for ripening the cheese the better is the quality of the cheese, and that about 40 degrees F. has given the best all-round results as compared with higher temperatures for ripening cheese.

However, we have been told that in the fall of the year it is very unwise to place cheese in a cold room as the cheese are spoiled. To test this point, we made on September 26th, 1906, 1,271 pounds, milk testing 4.0 per cent. fat, into three cheese weighing about 42½ pounds each when green. The whey tested .25 per cent. fat. The percentages of acidity at "dipping," "milling," and "salting" were respectively .2, .58 and .85.

After taking the cheese from the hoops they were weighed and marked A, B, and C. The "A" cheese was placed directly from the hoops into an ice cold storage where the average temperature was 44.3 degrees F. and where the air contained an average of 87 per cent. moisture. B and C were placed in an ordinary curing room at a temperature of about 60 degrees F. and having 83 per cent. moisture in the air. At the end of one week the B cheese was moved from the ordinary room to the ice storage, while C remained in the ordinary room. All three cheese were scored on November 6th, by Messrs. Barr & Waddell and about one week later by Messrs. Hodgson Bros. and Rowson in Montreal.

The table shows the shrinkage and quality of the three cheese:

Kind of Cheese.	Per cent. shrinkage one month.	Scorer.	Scores as given by two sets of judges. Flavor. 40	Closeness. 15	Even color. 15	Texture. 20	Total. 100
A. ripened in cold storage.	2.19	Barr & Waddell.	38	13.5	14	17.5	93
		Hodgson Bros. & Rowson	40	15	13	20	98
B. ordinary room one week then cold storage.	2.32	Barr & Waddell.	38	14	14	17	93
		Hodgson Bros..	40	15	12	18	95
C. Ordinary room @ 60°F.	2.96	Barr & Waddell.	37.5	14	14	17	92.5
		Hodgson Bros...	38	15	10	18	91

Conclusions.

1. The lower the temperature for ripening, the less the shrinkage and the better the quality of the cheese. Messrs. Barr & Waddell scored the A and B lots practically the same while Hodgson Bros. scored the cheese put directly from the press into ice storage three points higher. We have here also an illustration that "doctors differ" in their judgment.

2. From this and various other tests we have made, we have failed to see any harm coming to cheese placed directly from the press into a room where the temperature was about 40 degrees F. However, if we found a buyer objecting to this plan we should try to meet his wishes, so far as possible, as it usually pays to cater to the wishes of customers.

RIPENING CHEESE ON SHELVES VS. BOXING DIRECTLY FROM THE PRESS AND BOXING AT THE END OF ONE WEEK ON SHELVES.

These experiments have been carried on four years. In our last report we said, "The practical bearing of these experiments lies in its application to a system of ripening (curing) cheese in cold storage at the factory or at some central point, during which the cheese would not be removed from the boxes. If this plan of ripening cheese in boxes in cold storage be practicable it means a great saving of labor in the handling of the cheese and also a saving of space for ripening and storing the cheese."

Method of Ripening.	Scorer.	Average Score for: Flavor. 40	Closeness. 15	Color. 15	Texture. 20	Finish. 10	Total. 100	Per cent. shrinkage in one month.
Ice Storage @ 40°F.								
Boxed directly from press.	Dairy	37	14.14	14.85	18.40	10	94.39	1.48
Boxed after being on shelf one week	"	36.8	14.	14.70	18.30	10	93.80	1.80
On shelf	"	37.	14.16	14.75	18.17	10	94.08	2.40
Mechanical Storage @ 40°F.								
Boxed directly from press	"	36.55	14.18	14.80	18.11	10	93.64	1.90
Boxed after being on shelf one week	"	36.85	14.21	14.85	18.43	10	94.34	2.20
On shelf	"	36.67	14.34	14.92	18.20	10	94.13	2.60
Ice Storage @ 40°F.								
Boxed directly from press	Barr & Waddell.	37.50	14.25	14.	17.	10	92.75	.....
Boxed after being on shelf one week	" "	37.50	14.25	14.	17.	10	92.75	.....
On shelf	" "	38.	14.50	14.50	17.	10	94.	.....
Cheese made July 16th		.....	.....	.....	.....	.....	.....	.....
Boxed directly.	Barr & Waddell.	37.	14.	14.	16.50	10	91.50	.....
	Hodgson Bros.	38.	15.	12.	20.	10	95.	.....
Boxed in one week	Hodgson Bros.	30.	15.	12.	18.	10	85.	.....
	Barr & Waddell.	37.	14.50	14.	16.50	10	92.	.....
On shelf	Barr & Waddell.	38.	14.50	14.50	17.	10	94.	.....
	Hodgson Bros.	40.	15.	12.	20.	10	97.	.....

During the past year, thirteen experiments were made on this question, in which were used 21,197 lbs. milk testing an average of 3.61 per cent. fat. The average percentage of fat in the whey was .22. The experiments were made by using from 1,400 to 2,100 lbs. milk for each experiment from which two or three cheese weighing about 70 lbs. each were made in the usual way. When 2,100 lbs. milk was available one of the three cheese, when taken from the press, was placed at once in a clean dry box in either ice or mechanical cold storage at about 40 degrees F. The other two were placed on shelves in cold storage. At the end of one week, one of these was placed in a box and allowed to remain in the cold storage until ripened. When only two cheese were made in one day, one cheese was boxed directly from the press and the other was ripened on the shelf for a week, then it was boxed. At the next time of making the experiment, one cheese was boxed direct from the press and the other was ripened on the shelf in the cold storage. About half the cheese were ripened in an ice cold storage and half in mechanical. Both storages were kept as nearly as possible at a uniform temperature of about 40 degrees F.

The cheese were scored the first time, when six weeks to two months old and afterwards about once a month throughout the season.

The table shows the average of all scores and also the percentage of shrinkage during one month.

The results are similar to those obtained in former years and we cannot do better than quote from last year's report: "These results . . . indicate that it is quite practicable to put cheese from the hoops into a clean, dry box and place them in cold storage at 40 degrees F." "The chief objection to the plan is the strong development of mould on the cheese and in the box." There is a saving of about one per cent. in shrinkage by boxing directly from the press as compared with ripening on a shelf during a period of one month. The saving in shrinkage is less than one-half of one per cent. if the cheese be left on a shelf for one week before being placed in boxes.

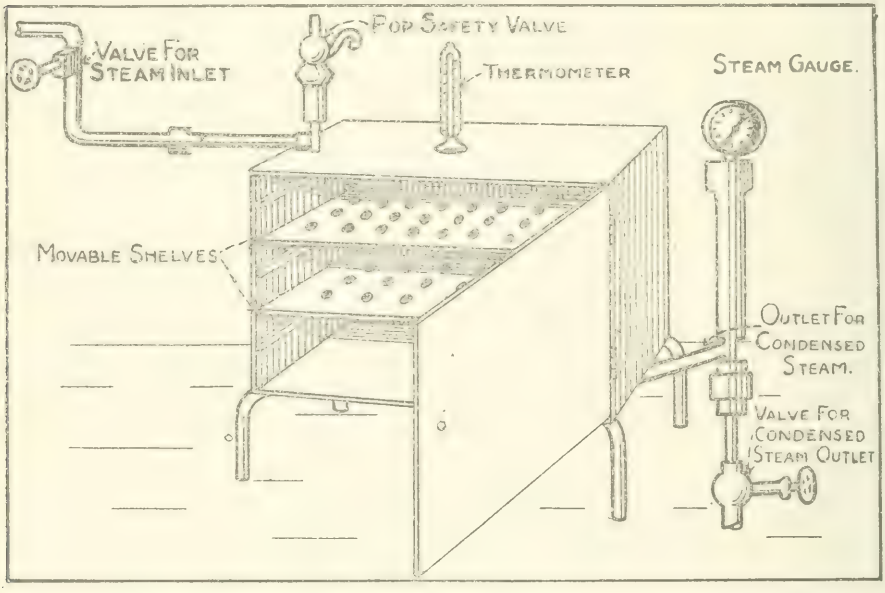
The three cheese made July 16th were scored by Messrs. Barr & Waddll on November 6th, and on November 8th these cheese were sent to Montreal, where they were scored by Hodgson Bros. There appears to be a marked discrepancy between the scores given to these cheese by the two sets of judges. This is especially so for the cheese placed on the shelf for a week, then moved into a box. Messrs. Barr & Waddell scored this cheese 92 points, while Hodgson Bros. gave it 85. Both gave the highest score (97 and 94) to the cheese ripened on the shelf in cold storage.

Two cheese were made June 13th, 1906, in a similar experiment to that of July 16th, except that the cheese on the shelf for a week was left out. These were also sent to Montreal at the same time as the lots of July 16th. Hodgson Bros. scored the cheese ripened in the box in cold storage 89 points and the one ripened on the shelf in cold storage 97. Messrs. Barr & Waddell scored the cheese ripened in the box 94 points and the one on the shelf 93½ points. Hodgson Bros. made a difference of 5 points in flavor and 3 in texture, in favor of the cheese ripened on the shelf. Barr & Waddell scored the two cheese exactly the same in every point except "closeness," for which they gave the cheese ripened in the box one-half point higher. Both these cheese were made from the same curd and treated exactly alike in every way, so far as possible, until they were placed in the ripening-room.

MISCELLANEOUS EXPERIMENTS AND WORK.

A Method of Determining Moisture in Butter, Curd and Cheese, which may be applied to Factory Work in Creameries and Cheeseries.

It would be of great advantage to butter and cheese makers if they had some rapid and approximately accurate method of determining the moisture in butter and cheese at small expense. Various devices have been suggested and tried, but none, so far as we know, have proven satisfactory to the average man. In the following notes we hope to make some suggestions of value along these lines. There is nothing very new or original in some parts, but the method of approximately estimating the moisture in a curd at the time of "dipping," or drawing the whey in Cheddar cheese-making, we believe to be entirely new, and trust that it may prove of some value to men in factories. We are not altogether satisfied with the method, but it seems to be a step in the direction of enabling the cheese-makers in the factory to secure more uniform degrees of moisture in the curd at the time of "dipping" and consequently more uniform cheese. It is not claimed to be scientifically accurate, but is along lines similar to those of the rennet test and acidimeter, which have proved to be helpful guides to the cheese-makers.



Portable Drying Oven.

Before dealing with this part of the work we shall first consider a few modifications of the methods ordinarily followed by chemists in determining the moisture content of butter, curd and cheese, which will enable the man in the factory to make use of such tests. We are indebted to the Chemical department of the College for suggestions.

Two years ago we had a steam oven connected with an ordinary steam pipe in our creamery for the purpose of drying samples. This oven is constructed on the same plan as the ordinary water bath oven used by chemists.

It was made by a local tinsmith of galvanized iron. There is an inch space for steam, between the outer and inner parts on all sides of the oven, except the front, where the door is located. It has ¼-inch steam pipe connections, for the inlet of steam on the top of the oven, and for the outlet of condensed steam near the bottom. Two regulating valves, a "pop" safety valve, a steam pressure gauge, a thermometer and two shelves in the oven for holding samples complete the outfit. The total cost was about five dollars, exclusive of safety valve and pressure gauge. The oven is made to withstand a steam pressure of about ten pounds. At first we did not use a safety valve and consequently too much steam was turned on by careless persons, which burst the oven on one or two occasions. A safety valve of the "pop" style is not expensive and is a measure of safety. After the steam pressure is regulated on the oven in the morning, it requires practically no attention during the whole day.

The dishes used by us for drying the samples are ordinary "pattypans" made of tin. These pans are about half an inch deep and two and one-half inches in diameter. The oven, which is 6 x 8 inches inside, will hold eighteen of these dishes on the two shelves and bottom, which latter acts as a shelf for holding samples.

The method followed for determining the moisture in butter is briefly as follows: about four ounces of butter is placed in a tightly stoppered bottle, care being taken to have this sample as representative as possible. The sample bottle is then set in a dish of hot water at about 140 degrees F. and the butter allowed to melt. As soon as melted the sample is thoroughly shaken and about 6 cc. of the melted butter is measured into two of the small dishes which had been previously weighed. About 3 cc. of the melted butter having been placed in each dish, they are quickly weighed, and then transferred to the steam oven for five or six hours. At the end of this time, samples are weighed. They are replaced in the oven and allowed to remain for 1 to 2 hours longer. If they are now the same weight as at the first weighing, or practically so, they are considered to be "moisture-free." We made several comparisons of this plan as compared with shaking the melted sample under cold water until the fat was solidified before sampling, and invariably found the duplicates to agree more closely by transferring the melted sample directly to the dish, and the labor involved by this plan is very much less.

In order to make comparison between the results obtained by following the plan as outlined, and the results as got in the Chemical Laboratory of the College, we took nine samples in June and July, the average moisture content of which was 13.587. The average of the moisture determinations from these nine samples as reported from the Chemical Laboratory was 13.715. The average difference was .128 per cent., which is well within the "limits of error."

The actual time required to make a moisture determination as outlined is not very much and is quite within the range of a butter-maker who has had some training in the use of a balance. For keeping records we use a small note book ruled into columns having headings as follows:

Date.	No. of dish.	Weight of dish.	Weight of dish and butter.	Weight of butter.	Time placed in oven.	1st Wt.	2nd Wt.	p. c. Moisture.	Remarks.

It is considered by some, if a sample of butter or cheese be left in the drying oven after the moisture has been evaporated, that the product increases in weight by oxidization. Several samples of butter and cheese were weighed

Product.	*Weight, 4 p.m.*	*Weight, 9 a.m. next day.*

for the second time about 4 p.m. They were placed in the oven again and allowed to remain until about 9 a.m. next day. The following figures show the results of these tests:

for the second time about 4 p.m. They were placed in the oven again and

Green cheese	22.370 grams.	22.365 grams.
" "	30.690 "	30.700 "
" "	18.725 "	18.715 "
" "	18.655 "	18.655 "
Butter	28.450 "	28.455 "
"	20.150 "	20.150 "
"	28,725 "	28.735 "
"	20.050 "	20.050 "
"	28.870 "	28.870 "
"	19.990 "	19.990 "
"	21.610 "	21.610 "
"	32.780 "	32.770 "

It will be seen by the foregoing that there is not much difference between the weights at 4 p.m. as compared with the weights at 9 a.m. the following morning. The practical application of this knowledge lies in the fact that if a factoryman were unable to make the second weighing the same day as the first weighing is made, no particular harm would result from leaving the samples in the drying-oven over night.

The method followed in sampling curd is somewhat as follows: After the whey has been run off and the curd has been placed in a curd sink or on racks in the vat and has been stirred until the cheese-maker thinks he has about the right degree of moisture left in the curd, samples are taken from three or four different parts of the curd and placed in a tightly stoppered bottle. A bottle holding about four ounces with a wide mouth and having a screw top, is very convenient for taking the samples. The small dishes are now weighed and the sample is thoroughly mixed as quickly as possible in the bottle with a spatula. From three to four grams of the curd are now quickly transferred to the small dish, weighed and placed in the oven. For accurate work, two samples should be taken and the results averaged. The remainder of the process is the same as for butter. It is very important to get first a representative sample from the large curd and also important to have the small sample which is placed in the dishes, representative. This latter can be got by mixing well in the sample bottle, and taking a small sample out quickly before the moisture or whey separates from the curd. It is also well to have the sample bottle not over half full in order to leave room for thorough mixing.

The samples of green cheese are usually taken by us before turning the cheese in the hoops on the following day after being made.

One sample is taken with a tryer from each cheese and then the cheese are placed in the press again for several hours. This closes up the hole made by the tryer and the cheese are not disfigured so much. The plug is drawn at a point about half way between the centre and outside of the cheese. Two or three plugs from a cheese would be more likely to be representative, but these disfigure the cheese more.

The plug is then transferred to a sample bottle, like that used for curd, and after cutting the whole plug into pieces as fine as possible, from two to four grams are transferred to the drying dishes, weighed and placed in the steam oven. The remainder of the work is similar to that described for but-

ter. An example of the method followed in calculating the percentage of moisture in a given sample will make it clear to those not familiar with such work.

Weight of dish	19.91	grams.
" " and cheese	23.03	"
" cheese in dish	3.12	"

Weight of cheese and dish after drying 6 to 8 hours = 21.98 grams. 23.03 — 21.98 = 1.05 grams lost in weight during drying. The loss on 3.12 grams = 1.05 grams ∴ the per centage lost = 1.05 × 100 ÷ 3.12 = 33.653 The percentage of moisture in the cheese is, therefore, 33.653. (This is assuming that nothing but moisture is lost from the cheese during the drying process. We are aware, some authorities consider that other volatile products may be lost during the drying of samples of butter and cheese, but as this has not been investigated, so far as we know, we shall assume that moisture only is lost during the process of drying in a steam oven. In any case, the volatile products lost, other than water, are likely to be small and will not seriously affect the results.)

We do not suppose that factorymen will have the time or inclination to test the moisture in all their dairy products, but we do think that a factory equipped with the apparatus outlined in the foregoing could test their dairy products from time to time at small expense and with material advantage to the factory.

A Short Test for Determining the Moisture in Curd at Dipping.

Uniform moisture in curds at the time of "dipping" or removal of the whey would be a great advantage to cheese-makers, and would tend, as we have said, to a more uniform quality of cheese. At the time when the curds are ready to "dip," is usually one of the busiest parts of the day, for a cheese-maker. As soon as the curd has sufficient acid for dipping, the bulk of the whey should be removed as quickly as possible. Any delay means an inferior quality of cheese. In our report for last year, p. 118, we say that one of the objects of the experiments made *re* "moisture in curd and cheese" was, "to find if possible a rapid method of approximately determining the moisture in curds at dipping." We further mentioned that we thought we had discovered such a method, but preferred doing further work on it before publishing the results. During the past season about one hundred lots of curd were tested with this short method and the results were compared with the actual determination of the moisture in the drying-oven as previously outlined.

This short test is based on the assumption that the specific gravity of a given volume of curd will vary approximately according to the moisture contained in that curd. Other factors also enter into the problem, such as the proportion of fat to casein, etc., but we have found that fairly uniform results are got by following the plan as outlined below:

For convenience, we used the acid measure in connection with the Babcock test, which is graduated to hold 17.5 cc. After the curd was stirred the measure was packed full of the curd to the 17.5 cc. mark, using a round stick for the purpose, and selecting small portions of the curd from various parts of the mass. The measure having been previously weighed, all that was necessary was to weigh the curd and measure, subtract the weight of the measure from the total, and the result was the weight of curd. (By having the balance regulated with a counterpoise equal to the weight of the measure, the net weight of the curd would be ascertained more quickly. We also

found there was some danger of breaking the glass measure, so got a tin measure made of same shape and size. This is not quite so convenient to fill and empty, but is not easily broken.)

Nearly fifty comparative tests were made from May to October, 1906, by stirring a curd very little at "dipping," then sampling, and afterwards stirring either the same curd or another curd from similar milk to a normal condition as indicated by the judgment of the cheese-maker. We have divided these results into four series, one being the average of results got in 1905, and three, the averages got in 1906. These latter three represent approximately the three parts of the cheese season, viz., spring, summer, and fall.

The following table shows the average of the results got in each series and also the average for the two years:

Date.	Curds with excessive amount of moisture at dipping.			Curds with normal amount of moisture at dipping.			Average % decrease in moisture of curds at dipping for each decrease of .1 gram in weight of 17.5cc curd.
	Average % moisture at dipping.	Average % moisture in green cheese.	Weight of 17.5cc curd.	Average % moisture at dipping.	Average % moisture in green cheese.	Weight of 17.5cc curd.	
			Grams			Grams	
1905	52.234	35.983	16.56	46.206	34.777	15.71	.70
May and June, 1906	49.764	34.821	17.93	46.856	34.262	17.47	.63
July and August, 1906	51.133	35.023	17.66	46.499	34.711	16.80	.58
September and October, 1906	53.246	35.564	17.78	48.378	35.755	16.91	.56
Averages	51.594	35.347	17.48	46.984	34.876	16.72	.617

Conclusions.

1. Cheese and butter-makers would find it convenient and valuable to know approximately the percentage of moisture contained in the products which they manufacture. With a steam drying oven, balance, and other small apparatus mentioned in the foregoing, we believe it quite practicable for average men, who have had a little training in the use of a balance, to ascertain the moisture content of the dairy goods which they are manufacturing.

2. For obtaining comparatively uniform percentages of moisture in the curds at dipping, we suggest to cheese-makers that they try the specific gravity or weight plan. The results of our work seem to indicate that if a given volume of curd weighs slightly less than 1 gram for each cubic centimeter of curd packed closely into a cylindrical vessel, it will contain about the proper degree of moisture at the time of dipping. The results further show that for each increase or decrease of .1 of gram in weight, which 17.5 cc. of curd may vary, the moisture increases or decreases by about .6 per cent. This decrease in weight of a given volume of curd may be explained by assuming that the same volume of curd is packed into the measure each time and that the difference, after stirring or removing some of the moisture, is represented by the extra volume of water held between the particles of curd. Theoretically this would seem to be a satisfactory explanation, because .1 cc.

of water weighs about .1 gram, and .1 is about .6 per cent. of 17.5—to be exact, .57 per cent. In a few cases we found that curds with a lower percentage of moisture had a higher specific gravity, but these were usually abnormal curds—chiefly "fast working" curds or curds with too much acid.

We have hesitated giving these results to the public, but finally decided to do so in order that we may obtain the experience of other workers on the points outlined.

MILK AND CREAM TESTING.

Measuring vs. Weighing Samples of Cream for Testing.

Several of the American States now require that cream shall be weighed into a Babcock bottle when testing for fat instead of measuring the quantity required for a test. If an ordinary 17.6 cc. milk pipette be used the results are too low, but by measuring 18 cc. of cream and being careful to rinse the pipette into the test bottle, fairly accurate results may be got with the pipette and at much less cost for labor. This is specially true for samples testing between 20 and 30 per cent. fat, the specific gravity of which is about the same as water, therefore 18 cc. will weigh about 18 grams. Care, however, should be taken to rinse the pipette into the Babcock bottle after measuring 18 cc. of cream, in order to get all of the measured cream into the bottle. Rinsings, however, should not be put into the bottle when the sample is weighed. Weighing all samples of cream into a Babcock bottle is more accurate than measuring, but measuring is more convenient.

The following table shows the difference in results from testing monthly composite samples of cream by weighing and measuring. These tests were made in April, July, and October, 1906.

No. of sample.	Measuring 18 cc. Per cent. fat.	Weighing 18 grams. Per cent. fat.	Difference.
1	17.5	18	0.5
2	18.5	19	0.5
3	20.5	20.5	0.0
4	22.0	22.5	0.5
5	24.5	24.5	0.0
6	28.0	29.0	1.0
7	28.5	29.0	0.5
8	29.0	29.0	0.0
9	29.0	29.0	0.0
10	29.5	29.5	0.0
11	29.5	29.5	0.0
12	29.5	30.5	1.0
13	30.5	31.0	0.5
14	33.5	34.0	0.5
15	34.0	35.0	1.0
16	36.5	37.5	1.0
17	37.0	38.0	1.0
18	41.0	42.5	1.5

The table shows a difference in the reading of measured and weighed samples ranging from 0 to 1.5. Six samples out of 18, or one-third, gave the same reading whether measured or weighed. One-third of the samples gave a reading of one-half per cent. higher when weighed as compared with

measuring. Five samples gave a reading of 1 per cent. higher by weighing, while one sample was 1.5 per cent. higher by weighing as compared with measuring. The tendency is for higher readings when weighing 18 grams of cream into a Babcock test bottle as compared with measuring 18 cc. into similar bottles. The bottles used in all cases were the ordinary wide mouthed cream bottles reading 30 to 40 per cent. fat.

Farrington and Woll, in their work, "Testing Milk and its Products," give the following table of specific gravities of fresh separator cream. We have taken the liberty of quoting this table, and have added a table of corrections for readings of the percentages of fat in cream tests with the Babcock method:

Per cent. fat in cream.	Specific gravity (17.5°C).	Corrections for fat readings when 18cc. cream are measured for a test.
10	1.023	— .23
15	1.012	— .17
20	1.008	— .16
25	1.002	— .05
30	.996	— .12
35	.980	+ .70
40	.966	+1.36
45	.950	+2.25
50	.947	+2.65

It will be seen by the foregoing that cream testing from 10 to 30 per cent. fat requires practically no correction by using an 18 cc. pipette. Above 30 per cent. the table of corrections will be found much more convenient than weighing samples of cream into the test bottles. Note.—The (—) sign means that this amount is to be subtracted and the (+) to be added to readings.

Comparison of Babcock and Gerber Methods of Testing for Milk Fat.

The composite samples from our own herd of cows were used for the months of March and April, 1906, for comparing these two methods of testing for milk fat, with the following results:

Number of Cow.	*March.*		*April.*	
	Babcock.	*Gerber.*	*Babcock.*	*Gerber.*
	% fat.	% fat.	% fat.	% fat.
15	3.2	3.2	3.3	3.2
17	3.8	3.8	3.3	3.4
21	3.9	3.8	3.9	4.0
26	4.8	4.8	....	....
28	4.4	4.4	4.0	4.0
56	3.7	3.7	3.5	3.6
65	3.8	3.8	....	....
66	4.3	....	4.8	5.0
69	3.6	3.8	3.6	3.7
72	3.5	3.4	3.2	3.1
76	3.3	3.2	3.2	3.1
86	3.5	3.5	....	....
87	3.3	3.2	3.0	3.0
97	5.4	....	5.0	5.0
98	4.8	4.7	....	....
99	4.9	4.9	4.5	4.5

Number of Cow.	*March.*		*April.*	
	Babcock. % fat.	*Gerber.* % fat.	*Babcock.* % fat.	*Gerber.* % fat.
101	4.6	4.5	3.9	3.9
103	4.0	4.1	....	....
104	4.8	4.8	....	....
106	3.3	3.2	3.5	3.5
107	3.8	3.8	3.9	3.9

Conclusions.

With these twenty-one cows' samples, in which the percentage of fat varied from 3.0 to 5.0 per cent., there was in no case a difference of over .2 per cent. fat between the reading as given by the Gerber compared with the Babcock. In most cases the difference was not over .1 per cent. These differences are within the "limits of error" and are no greater than would be found in comparing duplicates with the Babcock test. So far as results comparable with the Babcock are concerned, we should say the Gerber is quite satisfactory. However, the labor of testing is considerably more with the Gerber as compared with the Babcock. The chemicals are also more expensive. After making several comparative tests with the two methods, we are not prepared to recommend the Gerber in preference to the Babcock, although the former is used in Europe in preference to any other short test for determining the fat in milk.

Testing Samples of Milk and Cream.

We have a great many samples of milk and cream sent and brought to us for testing during the year. One creameryman writes: "I find it a very good way to settle disputes about tests to send the samples to the Dairy department of the College." We are pleased that parties are willing to accept our tests in case of disputes, but this work has grown so largely during the past year that we have been obliged to put a tax of five cents per sample for fat tests, and 25 cents for specific gravity tests and calculation of the solids in milk. This extra work is rather more than we can undertake with our present staff.

During the past year we have tested, for fat only, about 200 samples of milk and cream. Specific gravity tests and calculation of milk solids have been done in about 50 samples. These are in addition to our regular work, and are chiefly samples which have been sent in by mail or express from different parts of the Province. One man sent 27 samples to test for fat at one time, from near Orillia, Ont.

Official Testing of Holstein-Friesian Cows.

As intimated in my last report, we have continued to take charge of the "official testing" of Holstein-Friesian cows for both the Canadian and American Associations. Owing to the difficulty of securing proper persons to do the work, we have had to disappoint a number of breeders during the past year. We beg leave to suggest that this work be placed upon a more satisfactory basis than at present. One man could be profitably employed in "field work"—testing cows and giving advice to farmers in the proper management of their herds. This is one of the most valuable lines of work which could be undertaken. To some extent this need is being met by the Dominion Department of Agriculture in the "Cow-testing Associations" which have been formed, but the Province of Ontario could very well afford to keep at least one man in the field doing work of this kind.

At the meeting of the Dairy Teachers and Investigators held at Urbana, Ill., U.S.A., in July, 1906, it was the unanimous opinion of those present that a uniform standard of production should be adopted by all the Dairy Cattle Breeders' Associations. It was felt that there is no reason why the standard for entrance to the "Record of Merit" or "Advanced Registry," or whatever name may be given to the work of dairy performance, should be different for say a Jersey, as compared with an Ayrshire, a Holstein, or a Guernsey.

It was also felt that *yearly records* should be encouraged rather than those for a shorter period of time. We have placed these views before the Dominion Live Stock Commissioner at Ottawa, and also before the various Canadian Cattle Breeders' Associations. The sense of the meeting was in favor of similar standards in both Canada and the United States. As there is a great deal of dairy stock being continually exchanged between Canada and the U. S., it would seem to be in the interests of both countries that similar standards of excellence should be required in each, for the various breeds.

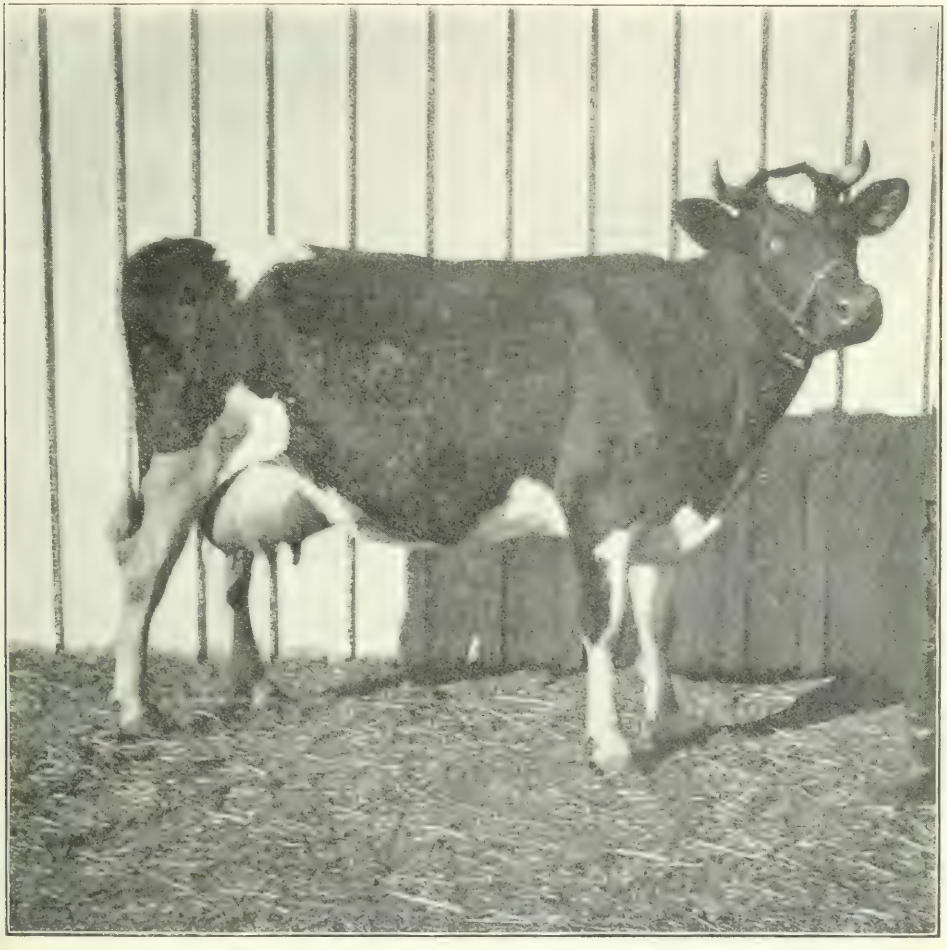
During the past year up to November 15th, 1906, we have supervised official tests of Holstein cows for 22 Canadian breeders, comprising 92 cows. In 1905, fifteen breeders had 63 cows tested. 1906 shows an increase of 7 breeders and 29 cows over last year. Most of the tests were for breeders in Ontario (one in the Province of Quebec) and the tests in most cases were for seven days only. There were two 30-day tests—one for P. D. Ede, Oxford Centre, whose cow gave 1,515.6 lbs. milk and 62.091 lbs. fat in 30 days; the other for Walter Schell, Woodstock, whose cow gave 1,381.5 lbs. milk, and 45.765 lbs. fat in 30 days.

The following list of breeders of Holstein-Friesian cattle, who have had cows officially tested during 1906 by the Dairy department of the College, shows that nine out of twenty-two live in Oxford County, which is recognized as the great dairy county of the Province.

Owner.	Post Office.	County.	No. Cows
I. G. Wychoff	Tyrrell	Norfolk	1
Thos. Hartley	Downsview	York	6
W. W. Brown	Lyn	Leeds	9
Wm. C Stevens	Phillipsville	Leeds	4
McGhee Bros.	Beachville	Oxford	1
G. A. Gilroy	Glen Buel	Leeds	1
F. C. Pettit & Son	Burgesville	Oxford	2
A. H. Teeple	Currie's	Oxford	1
Thos. Davidson	Spring Valley	Leeds	7
Neil Sangster	Ormstown	Quebec	11
Geo. Rice	Tillsonburg	Norfolk	9
Walter Schell	Woodstock	Oxford	7
P. D. Ede	Oxford Centre	Oxford	6
H. Bollert	Cassel	Oxford	3
J. W. Cohoe	New Durham	Brant (farm in Oxford)	1
W. H. Simmons	New Durham	Brant	3
Walburn Rivers	Foldens	Oxford	5
A. C. Hallman	Breslau	Waterloo	5
H. A. Laing	Spring Valley	Leeds	1
S. Macklin	Streetsville	Halton	3
Fred Row	Curries	Oxford	2
Jas. D. Truesdell	Spring Valley	Leeds	4

A Good Record.

The Holstein-Friesian cow, Boutsje 2nd Pietertje De Kol, No. 6093, C. H. F., which dropped a calf on October 26th, 1906, at which time she was not four years old, gave during the month of November, 1906, 2,522 pounds milk in the 30 days. Her composite sample for the month tested 3.5 per cent. fat. The total pounds of milk-fat for the month were 88.27, which is equal to about 103 pounds of butter. This record is all the more remarkable when we consider "that the average yield of milk in Ontario and Quebec is not much over 3,000 pounds of milk per cow per annum." In one month of 30 days this cow gave nearly as much milk as the estimated yearly yield of average cows in the Provinces of Ontario and Quebec.



Holstein-Friesian Cow. Boutsje 2 Pietertje DeKol No. 6093 C.H.F. Age, 4 years. Owned by Dairy Department, O. A. C. 30 day record, 2,522 lbs. milk, 3.5% fat, 103 lbs. butter; 7 day record, 643 lbs. milk; 1 day record, 96 lbs. milk on Nov. 21, 1906.

Her best seven day record was 643 pounds milk. Her best record for one day was 96 pounds, on November 21st.

The day before her large daily record was made she was fed 55 lbs. mangels, 25 lbs. corn silage, 15 lbs. clover hay, 12½ lbs. bran, 7 lbs. ground

oats, 3 lbs. corn meal, 3 lbs. oil cake, and 1 lb. gluten feed. She drank during the day about 200 pounds of water. So far as we know, this is the higest Canadian record for a cow for one or seven days, and we doubt if any cow has a verified record for thirty days that is equal to it.

Great credit for this remarkable record is due our herdsman, Mr. Wood, who took full charge of the cow during the test. He milked her four times daily during the thirty days. It was a great pleasure to see the bond of sympathy that existed between the cow and the person who fed and milked her.

The cost of her feed for the month was approximately $8.34. The value of her milk at four cents per quart would be about $40. The value of her butter for the month at 25 cents per pound is about $25. From December 15th, 1905, to November 30th, 1906, this cow gave 11,025 lbs. milk, and 396.69 lbs. milk fat. The cost of her feed during this time was approximately $44.

The Dairy Herd.

The herd during the past year has not been so large as usual, as it scarcely averaged 20 milch cows for the year. A number of those in the herd during 1905 proved to be not in calf, some were old and some were unprofitable. These were sold at beef prices in the spring. To some extent their places were filled with four cows purchased during the past year—two Holsteins and two Jerseys at a total cost of $850. We lost one very valuable grade cow with milk fever and one Jersey with brain trouble.

On the whole the season was a very favorable one for the production of milk, and the records would undoubtedly have been much higher had the older cows been milked by hand. Cows that are usually not dry more than six weeks were dry this year from three to five months. This has undoubtedly affected their record to a marked degree. The prices charged the cows for feed were: Hay, $6 per ton; corn silage, $1.50 per ton; bran, $18; gluten feed, $24; corn meal, $24; oil cake, $34; ground oats, $24, and mangels seven cents per bushel. Pasture was charged at the rate of $5 per cow for the season. The feed is not weighed daily, but often enough to give approximately the amount consumed by each cow for the year.

From the herd there was delivered to the Dairy 116,495 pounds milk, of which amount 75,101 pounds were pasteurized, cooled and sent to the College, and 30,635 pounds were delivered to the Macdonald Hall and Institute. In round numbers the value of this milk, at $1.60 per hundred pounds, was $1,200, sent to the College, and $500 sent to the Hall and Institute.

The remainder of the milk delivered to the Dairy from the herd went into the general supply and was used for separating cream sent to the College and Hall, or was made into butter. The surplus milk from the herd would just about furnish the cream sent to the College. There was sent to the College in round numbers 800 quarts of cream and to the Hall and Institute about 1,300 quarts of cream. The value of this cream is about $400.

In addition, the Bursar sold during the year, 7,488 quart milk tickets, worth $312. About one-third of these tickets were used for the purchase of cream from our general supply and about two-thirds represents the value of milk sold by the quart from the herd. The value of milk sold by the quart was approximately $200. The total value of sales of milk from the herd during the year was about $2,000, of which about $800 was cash. This does not include the milk used for rearing calves.

Record of Dairy Herd for 12 mos., Dec. 1, 1905, to Nov. 30, 1906.

Rank.	Name or Number of Cow.	Breed.	Age.	Live weight.	No. of days milking.	lbs. of milk.	Average per cent. of fat.	Lbs. of fat in milk.	Lbs. of butter adding $\frac{1}{7}$ to fat in milk.	Value of milk-fat @ 18c to 25c per lb	Value of milk @ $1.60 per 100 lbs.	Cost of Feed.	Profit over cost of feed. On milk-fat.	Profit over cost of feed. On milk.
										$	$	$	$	$
1	Adelaide, 106	Holstein	9	1,350	328	11,499	3.47	399.04	465.54	89 89	183 98	41 98	44 91	139 00
2	Boutsje, 107	"	3	1,355	309	11,025	3.59	396.69	462.80	88 78	176 40	44 00	44 78	132 40
3	Abby Marcena, 56	"	5	1,390	248	9,623	3.81	366.70	427.82	84 76	153 97	41 34	43 42	112 63
4	Marjorie Cornelius, 87	"	2	1,010	293	8,151	3.18	259.56	302.82	56 29	130 41	28 72	27 57	101 69
5	Lady Springwood II., 86	Grade Holstein	2	1,127	274	7,602	3.16	240.67	280.78	51 54	121 63	26 69	24 85	94 94
6	Molly De Kol, 76	Holstein	5	1,405	263	7,508	3.16	237.59	277.18	54 29	120 12	33 17	21 12	86 95
7	Lady Rockwood, 78	"	4	1,100	234	6,947	3.35	233.33	272.22	49 57	111 15	29 15	20 42	82 00
8	Daisy De, 72	"	4	1,120	249	6,834	3.48	238.11	277.79	53 56	109 34	33 09	20 47	76 25
9	Molly II., 69	Grade Holstein	4	1,190	302	6,676	3.67	245.30	286.18	53 07	106 81	34 55	18 52	72 26
10	Rena, 70	Ayrshire, Jersey	5	880	288	5,760	5.00	288.17	336.20	61 56	92 16	25 62	35 94	66 54
11	Matty, 101	Grade Jersey	7	1,195	251	5,374	4.32	232.65	271.42	50 19	85 98	28 13	22 06	57 85
12	Mar Corn, 15	Holstein	9	1,415	230	5,127	3.28	168.43	196.53	39 05	82 03	30 24	8 81	51 79
13	Dolly, 17	Grade Holstein	10	1,480	217	5,027	3.31	166.46	194.20	35 98	80 43	30 84	5 14	49 59
14	Daisy Maringa, 90	Holstien	2	1,002	165	4,878	3.35	163.55	190.81	33 10	78 05	(1)15 77	17 33	62 28
15	Glennie, O.A.C., 97	Ayrshire	3	903	248	4,791	4.42	212.22	247.59	46 80	76 65	26 29	20 51	50 36
16	Patience, 96	"	3	900	247	4,411	3.74	164.98	192.47	35 48	70 57	25 81	9 67	44 76
17	Lady Nancie, 66	"	6	940	233	4,390	3.83	168.46	196.53	37 92	70 24	30 88	7 04	39 36
18	White Clara, 102	"	3	1,110	195	4,190	3.99	167.49	195.40	34 52	67 04	26 60	7 92	40 44
19	Kalopathakes, 98	Jersey	4	820	274	3,952	4.34	171.89	200.54	36 88	63.23	26 24	10 64	36 99

(1) Two year old heifer milking for six months, hence feed charged for half year only. Feed not charged to heifers until after they freshen.

The cows are arranged in the table according to the quantity of milk given, chiefly because the production of milk for sale is the chief business of the herd. The first nine cows are Holsteins and Holstein grades. The records of Nos. 15, 17 and 66 were undoubtedly seriously affected by the use of the milking machine. No. 15 milked for 320 days in 1905 and 230 days in 1906. She gave 9,527 pounds of milk in 1905 and 5,127 pounds in 1906. No. 17 milked for 301 days in 1905 and 217 days in 1906. She gave 8,648 pounds of milk in 1905 and 5,027 pounds in 1906. No. 66 milked 287 days in 1905 and 233 days in 1906. She gave 6,487 pounds of milk in 1905 and 4,390 pounds in 1906. No. 56 gave at least 1,000 pounds less milk compared with what she would likely have done if hand milked, as she milked 313 days in 1905 and only 248 in 1906. In spite of these drawbacks the average for the nineteen cows for the year is 6,514 pounds milk and 277 lbs of butter per cow. This includes all milch cows in the herd for the year, and also three two-year-old-heifers' one of which, No. 90, did not freshen until June, hence her record is for practically only six months. Nos. 106 and 107 began their record the middle of December, 1905, hence for these two cows the record covers only 11½ months.

The records for the herd are not so accurate as in previous years, for the reason that weighing and sampling of the milk was done only once a week from each cow when milked with a machine.

Number and Estimated Value of Dairy Herd, Dec. 1st, 1906.

Breed.	No. of pure-bred cows.	No. of pure-bred heifers.	No. of pure-bred heifer calves.	No. grades.		Total No.	Estimated Value.
				Cows.	Heifers and calves.		
							$
Ayrshire	4	2	.....	.....	1	7	325
Jersey	3	1	1	2	1	8	330
Holstein-Friesian	10	5	3	3	1	22	2,145
Total	17	8	4	5	3	37	2,800

In addition to the foregoing we have three Holstein bull calves which we expect to sell shortly.

When we took charge of the Dairy herd in 1891 it consisted of nine grade cows worth probably $40 each, or a total of $360. During that year there were transferred from the Farm department to the Dairy two pure-bred Ayrshires, one Jersey and two Holstein-Friesian. The value of these five pure-breds was probably not much more than $250, so that the total value of the herd when we assumed charge sixteen years ago was about $610. We, by mutual agreement, are transferring the herd to the Farm department on January 1, 1907. The Farm department will also assume the responsibility of supplying milk to the College and Macdonald Hall. This will enable us to give more attention to experimental work in the dairy and to the manufacturing branch of the department.

Comments on Herd Record.

The value of the butter per cow at prices paid farmers for milk-fat, and allowing nothing for skimmed milk, varied from $33.10 (a two-year-old heifer) to $89.89. The value of the milk at four cents per quart, varied from $63.23 to $183.98 per cow for the year. The cost of the feed for a cow that was in the herd practically all the year varied from $25.62 to $44.98. The profit over cost of feed varied from $5.14 to $44.91 on butter and from $36.99 to $139 on milk.

The cow Rena, a cross-bred Ayrshire-Jersey, is one of the most economical butter producers in the herd. In quantity and economy of butter production she stands fourth in the herd. Her cost for feed is very low, being but a little over $25 for over 300 pounds butter.

All of which is respectfully submitted.

H. H. DEAN.

GUELPH, DEC. 3, 1906.

PART X.

THE PROFESSOR OF BACTERIOLOGY.

To the President of the Ontario Agricultural College:

Sir,—I have the honor to submit the following report:

Lecture and laboratory courses have been presented as laid down in the College calendar. In the sophomore work it is aimed to give as far as possible, in the course of twenty-five lectures only, a wholesome idea of the nature of moulds, yeasts and bacteria, and the relation of their functional activities to the different phases of farm life.

The senior lectures are of a more technical nature, and the aim is to give the student a more intimate knowledge of the conditions under which he may meet with the various types of micro-organisms in his daily life, that by controlling the conditions he may utilize those organisms which are beneficial and successfully combat those which are inimical to his welfare.

The seniors who elect the biology, dairy, or horticulture option have their lecture work supplemented by laboratory work upon those phases of the science bearing upon their respective options. The seniors electing the agriculture option should receive a laboratory course, without which an accurate conception of the science is impossible. The same for the sophomores.

The course in household bacteriology for the domestic science students has increased to four weeks, including lectures, demonstrations and laboratory work along those lines most intimately associated with problems of the home.

The short course specialists in dairying received twelve lectures and twelve half days' laboratory work in dairy bacteriology, the class having to be divided in order to give all the same work.

Both in the domestic science classes and the short dairy course classes lack of space to accommodate the large number of students is a serious drawback to the proper carrying out of the course, and neither the student nor the instructor can utilize the time to the best advantage under the present conditions.

A course of six lectures and demonstrations has been given to each of the Nature Study classes during the year, and one half day was spent in the laboratory with the dairy instructors.

Two seniors are doing thesis work in this laboratory, and special laboratory instruction has been given to two students during a part of the year.

An address on "Disinfectants and Disinfection" was delivered to the students in the short poultry course.

Contributions have been made by Mr. Barlow and myself to Canadian agricultural, horticultural, and other periodicals.

Routine Laboratory Work and Analysis.

During the year we have distributed 136 doses of tuberculin and 164 lactic acid starters for cheesemakers and buttermakers. The preparation and distribution of cultures for inoculating legumes has been continued, and 375 culture were distributed as follows: Ontario, 121; Nova Scotia, 108; United States, 60; Alberta, 24; Manitoba, 19; Saskatchewan, 14; Prince Edward Isl., 10; Quebec, 5; New Brunswick, 4; British Columbia, 4; South Africa, 4; Porto Rico, 1; England, 1.

Blanks were sent to the recipients of the cultures, asking for a report as to the success or failure of the trials. A large number of these reports have been received, many showing gratifying results of the experiments. As soon as the reports are all in, we purpose presenting the results for publication in bulletin form. An agreement was made with Professor Cumming, of the Truro Agricultural College, whereby the cultures sent to farmers in Nova Scotia were distributed in the name of the Nova Scotia Agricultural College, the reports to be sent to Professor Cumming.

The number of specimens submitted for diagnosis has increased, and the examination of these has consumed a great deal of time. A brief resume of these analyses follows, showing the nature of the specimens and the results of examination of the same:

Blood, 4 samples, 2 for diagnosis of typhoid fever; both negative. 2 for anthrax; both positive.

The throat, 24 samples, suspected diphtheria; 12 positive, 12 negative.

Internal organs, 7 samples, in three of which was found anthrax; in one pneumonia; one was negative for carcinoma; one undetermined was probably aesthenia of fowls; one undetermined was not tuberculosis.

Chickens, 70 specimens affected as follows:—Probable aesthenia, 12; occlusion of cloaca by adhesions, 1; mal-ovulation, 1; tuberculosis, 5; necrosis of liver or other organs, 11; infectious-entero-hepatitis, 5; white diarrhoea, 28; papillary fibromata, 1; fatty degeneration, 1; an undetermined protozoal disease, 4; ruptured ovary, 1.

Turkeys, 3 specimens all infectious-entero-hepatitis, caused by the protozoan parasite, *Coccidium avium.*

Pigeons, 3 specimens, one dead of diarrhoea, the other two submitted for diagnosis of tuberculosis which was not found.

Duck, 1 specimen, death caused by barb of grass in larynx.

Water, 16 samples examined, of which 8 were passed upon as unfit for drinking purposes.

Pus, 5 specimens, as follows:—For tuberculosis, negative; for gleet, negative; for anthrax, positive; for glanders, negative; for gonorrhoea, positive.

Urine, 5 specimens for tuberculosis, all of which were negative.

Sputum, 10 specimens for tuberculosis, 5 of which were positive.

Milk, 6 samples, one astringent, one slimy, two suspected of containing *B. diphtheriae* negative, two in which cream was said to be difficult to churn.

Butter, 1 sample, mouldy.

Cheese, 3 samples, 1 rusty, 2 said to be rancid.

Ice, 1 sample, condemned as unfit for use in drinking water.

Scabs from Cattle, 2 specimens, one of an infection allied to ringworm; one an eruption of the nose and mouth, not determined.

Eczema on human arm, 1 specimen, an infection allied to ringworm.

Tumor, 1 specimen, a fibro-myoma from the cervix uteri.

Swine, 8 specimens, all infectious pneumonia.

Apple twigs, 2 specimens, pear blight.

Pear Twigs, 1 specimen, pear blight.

Lactic acid starters, 2 specimens, "off-flavor;" pronounced good.

Sour corn from a canning factory, 1 specimen, caused by an organism in the water supply.

In all, 177 specimens were examined and the difficulty reported to the sender, and when necessary instructions given for overcoming such difficulty.

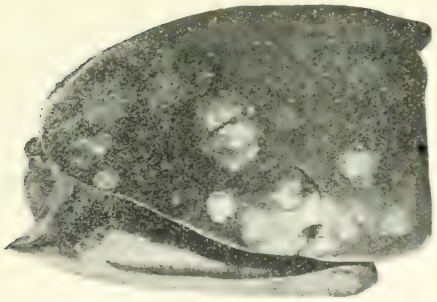


FIG. 1. Liver of turkey that died of infectious entero-hepatitis, or "blackhead."

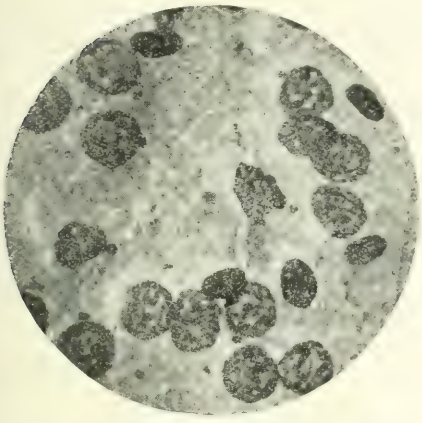


FIG. 2. Coccidium avium, the parasite which causes "blackhead," or infectious entero-hepatitis of fowls. From the liver of a young chicken. The five smaller cells are blood cells.

FIG. 3. Large branching bacteria from a nodule of the Horse Bean. Vicia faba. Magnified 1,570 diameters.

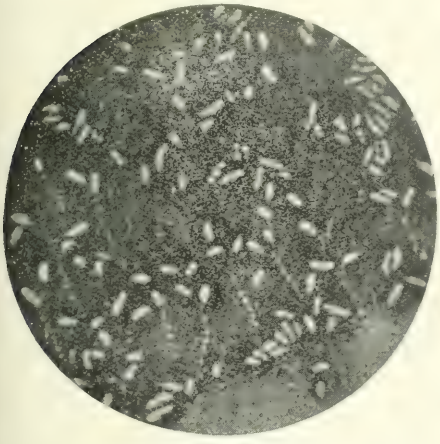


FIG. 4. Bacteria from a pure culture from a nodule of the Sweet Pea, Lathyrus odoratus. Each little rod has a lash at one end by which it moves. Magnified 1,500 diameters.

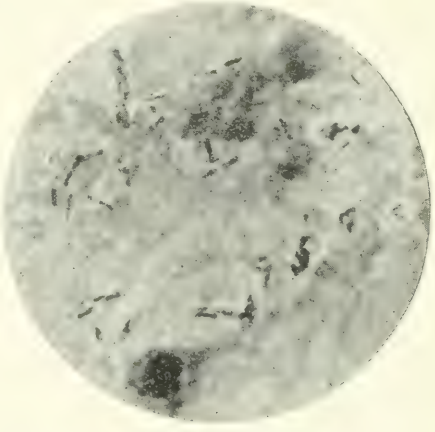


FIG. 5. Germs of tuberculosis in sputum. Such sputum, when carelessly expectorated in public or private places, becomes dried, and the germs being thrown into the air by passing feet, may be inhaled by healthy individuals.

Research Work.

In research work several problems have been undertaken, some of which have been finished and others are still under investigation.

As mentioned in my report of last year, we worked out a canning problem for one of the large factories of the Province. This company put up large quantities of tomato pulp in barrels during the rush season, this pulp to be made up later into catsup. Small losses by souring of the pulp had been experienced for three years previous to the fall of 1905, when the loss exceeded six hundred barrels. The factory was visited, samples were secured, and an organism was isolated from the barrels which was found to be capable of souring pulp. We recommended that the barrels be thoroughly fumigated with sulphur. A letter recently received from the president of the canning company states that this year the barrels were fumigated and the temperature of the basement in which the pulp is stored has been kept low, and that only a slight loss from souring of the pulp has been suffered.

We have been, and are still engaged in further studies of the morphology, cultural characteristics and functional activities of the nodule bacteria of leguminous plants, by the aid of which those plants are enabled to secure a nitrogen supply from the air.

Observations upon the bacterial diseases of fruits and vegetables occurring in this vicinity have been made from time to time throughout the year, notes upon which follow:—

Pseudomonas campestris.—This organism is the cause of Black Rot of cabbages and allied plants. During this season it has been found affecting the following plants, all of the genus *Brassica*:

1. B. oleracea Var. acephala—Jersey Kale, Thousand Headed Kale, Curled Kale, Collards.
2. B. oleracea Var. gemmifera—Brussels Sprouts.
3. B. oleracea Var. capitata—Sutton's Best of All Savoy Cabbage; Sutton's Earliest Sheepfold Cabbage; also other kinds of cabbage, red, green and Savoy.
4. B. oleracea Var. botrytis—Purple Sprouting Broccoli, Cauliflower.
5. B oleracea Var. caula-rapa—Early White Vienna Kohl-rabi, Giant Purple Kohl-rabi, Goliath Purple Kohl-rabi.
6. B. napus—Cabbage Leaf Rape, Dwarf Essex Rape.
7. B. campestris—Hartley's Bronze Top Turnips (Rutabaga).
8. B. rapa—White Turnips.

Other named kinds, especially of cabbages and turnips, growing on the experimental plots were affected, but a complete list was not made, and the plants in the above lists were not selected as being especially subject to the disease. It was observed, however, that some kinds were more severely injured than others. For example, the Jersey Kale was more diseased than any other kale.

Bacterium amylovorum.—This bacterium has continued to ravage the fruit trees of Ontario as in the past seasons. It causes fire blight and twig blight of the pear, quince, and apple.

The English Hawthorn, *Crataegus oxycantha*, has been planted in this neighborhood and has escaped from cultivation, so that it is not uncommon along certain streets and lanes. *Crataegus oxycantha*, Var. *splendens*, is a variety of it with double scarlet flowers, and this variety has

been planted among the ornamental shrubs on the campus. Early in July of this season, these scarlet-flowered thorns were found to be blighted. The disease had every appearance of fire blight, and most of the infections were blossom infections. A bacterium like *Bacterium amylovorum* was constantly found in great numbers in the blighted stems. Pure cultures were isolated and inoculated in young fruits of the pear and produced the usual reaction for pear blight. A pure culture from the thorn was inoculated in a growing sprout of an apple tree on July 12th, and the symptoms of twig blight appeared in three days. In four days the disease had progressed upward and downward from the point of inoculation, involving eight inches of the twig and causing it to wilt and turn black. The twig was broken from the tree, and pure cultures were isolated of a bacterium resembling *Bacterium amylovorum* in morphology and cultural characters. It has grown in parallel cultures with the organism isolated by us from a typical case of fire blight of the apple, and agreed in every respect with it. The English Hawthorn was examined, but pear blight was in no case discovered, whereas this scarlet-flowered variety of the same English thorn was blighted so severely that its beauty was destroyed for the season, and some older and weaker trees of it were killed outright. There are many species of *Crataegus* growing wild in Ontario, but we have not seen any native species affected with pear blight. For these reasons, we would caution fruit-growers against planting the scarlet-flowered English thorn, and likewise the cut-leafed variety of the English Mountain Ash, *Pyrus aucuparia*, Var. *laciniata*. These ornamental shrubs are both subject to fire blight and are a menace to the orchard.

Bacillus tracheiphilus.—Cucumber wilt appeared late this season and did little injury in this vicinity. We have devoted some study to the cultivation of *B. tracheiphilus*, the organism which causes the disease. It is difficult to isolate this bacillus or to keep it alive, for it grows feebly or not at all in the ordinary media of the laboratory, especially in gelatin media. We have devised, prepared, and tried many special media and have found several in which the organism grows freely, the growth in certain gelatin media being especially copious and characteristic. This work is still in progress.

Slimy Strawberries.—There is no disease of ripe and green strawberries which, though widespread and injurious, appears not to have been described. A translucent spot appears in the affected berry and spreads through the tissue. When the berry is crushed, its turbid juice draws out in slimy threads. An organism giving rise to yeast-like, budding cells was constantly found in the slimy berries, and we have succeeded in isolating it by means of plate cultures in strawberry agar. Work on this organism is in progress, and we hope later to give an account of its morphology and life history.

The Mosaic Disease was observed among cabbages and in the Purple Sprouting Broccoli.

Bacillus oleraceae.—Harrison's Soft Rot or Stinking Rot of the turnip and cauliflower appeared again this year. The cabbages and cauliflowers on the Horticultural department were harvested with but little loss from this disease. Swede turnips or Rutabagas suffered more, and white turnips grown on the Experimental plots rotted to a soft, stinking pulp. Some of our fourth-year students working in the laboratory isolated the bacillus and inoculated it again in growing plants of cauliflower, where it caused a rapid rotting of the head.

Respectfully submitted,

S. F. EDWARDS.

PART XI.

THE PROFESSOR OF HORTICULTURE.

To the President of the Ontario Agricultural College:

SIR,—I have the honor to present herewith my fourteenth annual report on the work of the Horticultural department. For convenience of consideration the work of the department may be grouped under three headings:—

(1) Instruction to students, information given to the public through correspondence, and the publication of articles and reports.

(2) The management of the outside work of the department, including investigations conducted on the College grounds.

(3) College extension work throughout the Province.

A lesson in floriculture—theory.

INSTRUCTION IN HORTICULTURE.

While the public rightly expects much from us, apart from regular College work, we feel that our first duty here is to the students. This includes instruction work given to the regular classes in the First, Second and Fourth Years of the Long Course; also to classes of ladies from Macdonald Institute; to teachers' classes in Nature Study; and to the various Short Courses and Conventions held at the College. Further than that, we are called upon from time to time to supply articles to newspapers and other reports published by the Department.

Management of the Department.

That part of the College grounds in charge of the Horticultural department comprises 71 acres. This includes 42 acres in lawn and grounds, 23 acres in orchard and fruit plantation, and 6 acres of vegetable garden, and, in connection with these, we have 8,000 square feet of space under glass in our greenhouses, and during the spring as much more under cold frames. To the general farmer, who has a couple of hundred acres, this may not seem a very extensive area, but the intensive methods practised upon the greater part of it, involve as much labor as is usually put upon a farm ten times the size. The work of the outside department naturally divides into four divisions: The orchard and fruit plantations, the vegetable garden, the lawn and grounds and the greenhouses, flower beds and borders. All of these various branches of the department require close supervision to keep them at all times in first-class condition, as they necessarily must be where we have so many thousand visitors throughout the year, and where everything is supposed to furnish an object lesson for students, as well as visitors.

A lesson in floriculture—practice.

Weather conditions the past season have been favorable for horticultural crops of all kinds. While many parts of the Province suffered from drought, we had an abundance of rain; in fact so much during the early part of the season that it was difficult to get on with the work and keep down weeds. The lawn and grounds never looked fresher and better than they did throughout the whole of the year, and the fruit and vegetable crops of most kinds were excellent.

Experimental Work.

At a College of this kind, where the instruction of students receives first consideration, experimental work must necessarily take second place. Investigations are being conducted, however, along a number of important lines of work, among which the following may be noted: Variety tests with apples, pears, plums, cherries, grapes, raspberries, blackberries, currants, gooseberries, and strawberries; tests with orchard cover crops; tests with

tomatoes and a large number of garden crops such as beets, carrots, cabbage, cauliflower, celery, lettuce, onions, radish, etc.; plant breeding with fruits and vegetables. Tests are also being made of a large number of ornamental plants for outdoor and greenhouse culture. Some of these will be briefly reported upon in the following pages.

Tree Fruits.

Ten years ago we set out an experimental orchard, made up of a large number of varieties of all the tree fruits which it was thought might be grown in this locality. In this orchard the trees have had a more or less severe struggle for existence against the unfavorable nature of the soil, and the severe climatic conditions which prevail at this place. The land, though thoroughly underdrained, is not well adapted to fruit, and the disastrous winter of 1903-4 killed the greater number of the less hardy kinds of trees. The gaps have been filled with more hardy kinds, but it is quite evident we shall always be more or less seriously handicapped here in the growing of many kinds of fruits.

Practice in the use of Seeders and Wheel-hoes.

Apples have stood the adverse conditions better than most of the other tree fruits. Our orchard now contains about 120 varieties, and new varieties are being added from time to time by grafting into trees which have been planted for this purpose. A careful record is being kept of each tree in order to enable us to compare the individuality of different trees of the same variety. In these records are noted the vigor and hardiness of each season's growth, the age of bearing, the date and amount of bloom, the amount of crop, kind and quality of the fruit. In a few years these notes will afford valuable data for guidance in the selection of individuals for plant breeding and propagation.

The apple crop this year was on the whole a little below the average on account of the heavy crop last year.

Those varieties which fruited this year are grouped in the following lists, according as they bore a heavy, medium, or light crop:

Those which bore heavily were: Duchess, Gano, Gideon, Gravenstein, Grimes, Longfield, Seek-no-further, Trenton, Wallbridge, Wealthy, and the Martha Crab.

Those which bore a medium crop were: Alexander, Acubafolia, Ben Davis, Bellflower, Canada Baldwin, Colvert, Golden Russet, Haas, Hare Pipka, McIntosh, Northwest Greening, Shackleford, Tolman, Wellington, and the Montreal Beauty and Whitney Crabs.

Those which bore a light crop were: Astrachan, Babbit, Benoni, Bethel, Blenheim, Fallawater, Fameuse, Fall St. Lawrence, Jonathan, Hubbardston, Lawver, Magog, Maiden's Blush, McMahon, Ontario, Primate, Pewaukee, Rhode Island Greening, Northern Spy, Scott's Winter, Tetofsky, Yellow Transparent, Wolf River, and the General Grant, Hyslop, and Transcendant crabs.

Pears have been more or less of a failure here. About 150 trees, including 40 varieties, were planted at the time the orchard was set out ten years ago, but only a few of the trees planted at that time now survive. The most of them failed after the severe winter of 1903-4. Of the survivors, Flemish Beauty, Clapp's Favorite, Manning's Elizabeth, Lincoln, Ritson, and Bessemianka, bore a light crop this year.

A lesson in tree planting.

Plums have also suffered on account of the adverse soil and weather conditions. Our orchard contains 30 European, 6 Japanese, and 22 American varieties. Of the European varieties, Glass appears to be one of the hardiest. Among the others of that type which fruited this year were: Coe's Golden, Grand Duke, Imperial Gage, Monarch, and Reine Claude.

The American varieties are quite hardy, but are much inferior to the European. The following varieties of this type bore heavily this year: Hawkeye, Hoskins, Keith, Cyclone, Col. Bryan, De Sota, Penning Free, Rollingstone, Stoddard, Stella, Wyant, Wolf and Weaver.

Cherries.—Only the hardiest varieties of cherries of the sour type have been able to stand the climate here. Of these, the Early Richmond and Montmorency have proved the best.

Orchard Cover Crops.

The value of a cover crop of some kind in the orchard is now pretty generally recognized by all up-to-date fruit-growers. The most successful fruit-growers give their orchards clean cultivation from the early spring till about the middle or end of July, when tree growth should cease. A cover crop of some kind is then sown immediately after the last cultivation. Such a crop benefits the orchard by affording protection to the tree roots if the ground is bare of snow in winter, in holding snow as an additional cover when it comes, in checking a late growth of trees in the fall, in taking up plant food from the soil which might otherwise be lost by leaching, and, above all, by adding to the fertility and friability of the soil when the crop is turned under in the spring.

An orchard cover crop. Soy beans.

For the past four years we have been conducting an experiment in our orchard for the purpose of determining what are the best kinds of cover crops to use, and also what rate of seeding will give the most satisfactory covers. The following notes by Mr. H. S. Peart, of this department, give these particulars with the crops sown this fall and last.

Cover Crops, Spring of 1906.

The following notes taken April 24th on the cover crops sown July 28th and 29th, 1905, will show their relative values as winter covers:

Hairy Vetch, sown at the rate of 35 pounds per acre, made a good fall cover, but over one-half of the plants killed during the winter, the rest only half covering the ground. This is a rather unusual occurrence, as vetch is usually quite hardy.

Crimson Clover was killed outright.

Alfalfa, sown at the rate of 30 pounds per acre, wintered in first-class condition, and the desired winter cover was maintained. The plants at this are making a vigorous growth.

Rye, sown at the rate of 1½ bushels per acre came through the winter in good condition and commenced growth early in the spring. The winter cover formed by rye is all that could be desired.

Dwarf Essex Rape was all killed, but the stiff stems were useful in holding the snow.

Red Clover, sown at the rate of 20 pounds per acre, came through the winter very well, and made a good growth early in the spring.

Mammoth Clover, sown at the rate of 20 pounds per acre, appeared similar to Red Clover. Both are good cover crops.

Hairy Vetch, 20 pounds, and *Mammoth Clover*, 10 pounds per acre. The vetch was nearly all killed and the clover was only about one-half thick enough to make a good cover.

Alfalfa, 15 pounds, Red Clover 8 pounds per acre wintered very well, but the alfalfa overgrew and nearly smothered out the clover. Few, if any, of the mixtures have proved equal to the same crops sown separately.

Grass Peas killed with the early fall frosts, and were mostly decayed before spring.

Crimson Clover, Horse Beans, and Prussian Blue Peas were all killed, and furnished but little cover of any kind.

Cow Horn Turnips were killed during the winter and the decaying roots made a very objectionable odor in the spring.

Of the crops tested, the following may be named as the most satisfactory: Alfalfa, Red and Mammoth Clover, Rye, and Hairy Vetch. Probably Crimson Clover might be added to the list for Southern Ontario, but it is not hardy enough here.

Cover Crops in Fall of 1906.

The following notes on the autumn condition of the cover crops sown July 19th and 20th, 1906, taken after killing frosts had cut down the tender ones, will furnish some information regarding the relative merits of the different crops in the autumn.

Alfalfa, sown at the rate of 30 pounds per acre, made a good growth of about 10 inches, and formed an even close mat on the ground 2 inches thick. The tallest stalks were beginning to show frosted leaves, but the ground cover was quite green.

Rye, sown at the rate of 1½ bushels per acre, grew to a height of 12 inches and formed an even, dense mat, about 3 inches thick over the ground.

Dwarf Essex Rape, sown at the rate of 8 pounds per acre, formed a heavy even cover. The plants grew to a height of 2 feet, but were broken down to about 8 inches. The frost up to this time (Nov. 14th) had not yet killed the plants. Owing to the great height of this crop, the harvesting of the fruit in the orchard was rendered rather unpleasant.

Red Clover, sown at the rate of 20 pounds per acre, made an even heavy covering about 2 inches thick. So heavy was the covering that fallen apples did not settle to the ground but were held on top of the cover.

Mammoth Clover, sown at the same rate as the Red, made a similar growth. It would be very difficult to distinguish one from the other at this time.

Hairy Vetch and Mammoth Clover, mixed in the proportion of 20 pounds of vetch and 10 pounds of clover per acre, formed a good close mat about 2½ inches thick, but the clover tended to smother out the vetch. The results of several years' tests go to show that mixtures of this kind are not as good as either clover or vetch sown alone.

Alfalfa and Red Clover, mixed at the rate of 15 pounds of alfalfa and 8 pounds of Red Clover per acre, made a good even cover, but the mixture has nothing to recommend it over either crop sown alone.

Grass Peas, sown at the rate of 2 bushels per acre, made a heavy growth of about 4 feet, but killed down until only a very light cover of frozen straw remained. The peas did not make sufficient growth to check weed growth, and the chickweed made a fairly strong growth under the peas.

Horse Beans, 30 pounds, Prussian Blue Peas, 30 pounds, and Crimson Clover, 10 pounds, per acre gave poor results this season. The peas and beans made but a short growth, and the clover was not sown heavy enough to make sufficient cover. In former years this mixture has given excellent results as a summer cover after strawberries.

Soy Beans, sown at the rate of 2 bushels per acre, made a strong stand of plants, but the crop was killed by the severe frost of Oct. 11th, and very little of it remained to cover the ground for winter.

Hairy Vetch, sown at the rate of 35 pounds per acre, made a dense even cover fully two inches thick, and was like a thick velvety carpet under foot. This is a very desirable cover crop.

Crimson Clover, sown at the rate of 20 pounds per acre, formed a thick, heavy mat about 4 inches thick,—many of the plants reaching a height of 8 or 10 inches. If this crop would only live through the winter, it might be one of the best.

Further notes on the condition in which these crops come through the winter will be taken next spring.

Bush Fruits.

When the department was established fourteen years ago, we began extensive variety tests with all of the fruits which it was thought could be grown in this locality, including bush fruits, such as raspberries, blackberries, currants, and gooseberries. The first plantations set out reached their limit of usefulness in eight or ten years, and new plantations were made, in which the work is now being carried on.

Raspberries.—We are now fruiting our third plantation of raspberries which has been set out since this experimental work began. Sixty varieties were fruited in the second plantation and thirty are still under test in the

new plantation. Without entering into details, the following may be named as a few of the varieties which rank among the best in the trials so far: *Red*: Marlboro, for early, Cuthbert, for late. Herbert, a new variety originated with Mr. R. B. Whyte, Ottawa, has made a good record, and this year ranks first among the red varieties. *Purple*: Columbian; *Black*: Older and Smith's Giant. The Older has for a number of years proved to be one of our hardiest and most productive black raspberries. It usually comes through the winter uninjured when other varieties are seriously frozen back. Golden Queen is the best yellow raspberry.

Blackberries.—After ten or twelve years' testing of twenty-three varieties of blackberries, among which were included the hardiest known varieties, we have to report that this fruit cannot satisfactorily be grown here. Similar reports have also been received from many of our co-operative experimenters from many parts of the Province. The blackberry is one of the tenderest of the bush fruits, and requires favorable soil and locality to do well. The Eldorado and Agawam have proved the hardiest where they can be grown.

Currants.—Currants are among the hardiest of the bush fruits, and have usually given good results here. Forty-six varieties have been under test, among which the following may be named as the best: *Red*: Red Cross, Victoria, and Fay's Prolific. Raby Castle often yields better than any of those mentioned, but the fruit is much smaller and does not compare with Fay or Victoria, either for home use or for market. White Grape ranks first among the *white* varieties, and has usually been one of the most productive yielders in the whole plantation. From among twenty-two *black* varieties under test, Black Victoria, Naples, and Champion, have proven the best taken on an average of several years. The Climax, a new variety, gave the largest yield this year, but it will require further testing before it can be recommended in place of the others mentioned.

Gooseberries.—Of the forty-five varieties under test, thirty-six fruited this year. Our most productive varieties have always been those of American origin, such as Pearl and Downing. A new variety, called Lady Leicester, has for the past three years given the heaviest crop, but the fruit is like that of the old Houghton, too small, hence it cannot be recommended for general planting. Of the large-fruited varieties, Red Jacket and Whitesmith have proved the best, but they are not nearly so productive as Pearl or Downing.

Strawberries.—The strawberry has always proved one of our most reliable fruits, and over four hundred varieties have been carefully tested here during the past ten or twelve years. This year we had nearly one hundred new varieties under test, and had an excellent crop from which to judge of their qualities. So far none of them appear to be superior to the old reliable kinds which have been mentioned in our previous reports. From our experiments so far we would recommend the following as a few of the best to cover the season from early to late: *Early*: Splendid, Warfield, and Haverland; *Midseason*: Williams, Ruby, Clyde, and Parson's Beauty; *Late*: Buster. The last is a large, light colored berry which for several years past has ranked among the heaviest yielders. It is well worthy of a trial for home use or market, although its light color makes it undesirable for canning.

Plant Breeding.

We were able this year to make more progress in plant breeding than ever before. Mr. J. W. Crow, one of our undergraduates, was employed at

plants of various kinds, and a great number of crosses were made. The following notes by Mr. Crow give a brief outline of the work in progress:

The plant breeding operations begun in previous years were continued this year and several new lines of work were begun. Careful observations were made on the second fruiting of ninety-two strawberry seedlings and one hundred and four raspberry seedlings, and on the fourth fruiting of sixteen strawberry seedlings. Several would appear to be of promise, but so many conditions of soil and weather affect the yield and quality, especially of strawberries, that more extended tests will be necessary before the merits of any can be definitely decided. The crossing of these fruits was continued and considerably extended.

A large number of berries were produced as the result of using pollen of Falstaff, a European raspberry, on Herbert and Cuthbert raspberries. A combination of the quality and size of the European berry with the hardiness of the native species is hoped for. A purple-cane variety, Columbian, belonging to the species *Rubus neglectus*, was successfully crossed with the Strawberry-Raspberry (*R. rosaefolius*).

One of the objects aimed at in the cross-breeding of raspberries is the production of a variety as early as Marlboro but with the productiveness and quality of Cuthbert. Considerable difference was noted in the time of ripening of Cuthbert plants grown under the same conditions and a selection of those ripening the first appreciable quantity of fruit was made. These will be propagated from as extensively as possible and subjected to continuous rigid selection with respect principally to the period of ripening. In this way also it is hoped that the desired end may be attained.

It is to be regretted that in the past very little attention has been given to the improvement by cultivation of our native fruits. We have allowed the limits of our fruit-growing areas to be largely determined by the tenderness of the varieties which our ancestors brought from the old land. The hardiness of our native cherries, for instance, would seem to justify attempts to improve them in other respects, but hitherto no such attempt has been made. A careful examination of the wild trees of the common choke cherry, *Prunus Virgiana*, of this vicinity revealed considerable variation in the size and quality of the fruit borne, while nearly every tree over three or four years of age produced an abundant crop. Some trees were found which produced fruit much less astringent than the ordinary choke cherry and measuring nearly .45 of an inch in average diameter. From these several hundred pits were planted, and the seedlings will be carefully cultivated, in the hope that still further improvement may be made.

Several other lines of work were begun and many crosses with flowers and other plants were made. Valuable experience has been gained, and it is the intention to still further enlarge the scope of effort. The work which can be done here is, however, limited in extent. The pressing needs of the Niagara district grower are in no way identical with those of growers in localities which possess a climate similar to that at Guelph. It is well known that varieties are pre-eminently suited to the localities in which they originate, hence our efforts must of necessity be extended to other localities where fruit is being largely grown.

Vegetable Gardening.

The growing importance of the market garden industry in Ontario is evidenced by the number of associations of vegetable growers which have been formed in various parts of the Province during the past year. Until

now these growers have, as a rule, been working along independently and often at a great disadvantage because they were not in touch with one another, nor did they receive the reports and bulletins sent out by the Government to the members of such organizations as the Farmers' Institutes and Fruit Growers' Associations. These Vegetable Growers' Associations will also receive our reports and bulletins, and, like the other organizations, will find us ready to give them all the assistance possible.

This year we began a series of systematic variety tests with a number of the leading garden crops. It has been said by some that such tests are of no use, but judging from the endless list of varieties offered by seedsmen, and the results already obtained from our experiments, we realize that much valuable information has yet to be gained through such tests. After we have determined by careful testing which are the best varieties, we will then be in a position to look for the development of new and better varieties by selecting and breeding from the best of those we now have.

The crops with which the most extensive experiments were made this year were, beets, of which we grew 52 varieties, carrots, 26 varieties, cabbage 68, cauliflower 22, lettuce 72, onions 51, radish 68, and tomatoes 73. A list of leading varieties compiled from these experiments, together with descriptions of the most promising of the newer varieties is being printed in the report of the Fruit Experiment Stations for 1906, copies of which may be had on application to the Department of Agriculture, Toronto.

Floriculture.

There is a growing demand each year for information regarding the most suitable kind of plants for beautifying home surroundings. In order to furnish information of this kind, as well as to provide material for the instruction of students, we have for several years been giving considerable attention to the growing of the various classes of flowers used in the flower garden. In our report last year was given a list of fifty of the most desirable kinds of hardy perennial plants for use in perennial borders. These plants we consider among the most desirable for the amateur, and to all interested in such we would recommend that list.

Among the annual flowers there are also quite a number which will always be favorites with the amateur. For a number of years we have grown over a hundred different kinds of hardy annuals, and in the following list give a few of those which we believe are among the best for the amateur's garden. Most of these may be sown out-of-doors as soon as the ground is sufficiently dry in the spring, usually about the end of April.

Aster.
Amaranthus
Alyssum.
Balsam.
Calendula.
Calliopsis.
Candytuft.
Delphinium (Larkspur).
Dianthus.
Eschscholtzia (California Poppy).
Gaillardia.
Kochia Scorpia (Summer Cyprus).
Malope grandiflora.
Marigold.
Mignonette.
Nicotiana sylvestris.
Nicotiana affinis.
Nasturtium (climbing and dwarf).
Rudbeckia bicolor.
Phlox Drummondi.
Poppies (single and double).
Salpiglossis.
Scabiosa.
Sweet Pea.
Stocks (Ten-week).
Zinnia.
Wallflower.

Climbing Annuals.

Cobea Scandens.
Ipomea or Convolvulus (in variety).
Tropaeolum (Climbing) (in variety).

The following are a few of the Biennials and Perennials that can be grown as annuals by sowing early indoors and transplanting outside about the end of May. If sown out of doors, they flower very late in the season..

Ageratum.
Antirrhinum (Snap Dragon).
Pansy.
Petunia.
Salvia.
Verbena.
Wallflower.

The dahlia and gladiolus are among the most useful of the bulbous and tuberous rooted plants for summer flowering and should be much more largely grown.

New Greenhouses.

During the summer our old greenhouses which had served their time and were becoming dilapidated through decay, have all been replaced by new and modern structures. In the construction of these, we have tried to combine the latest and most approved ideas regarding suitability for the work, convenience, and durability. Concrete and iron have been used largely instead of wood, and we believe we now have as durable and complete a set of houses as could be desired for our purpose.

With the increasing demand upon us for more attention to classes and experimental work, it has been found necessary to change to some extent the nature of the work carried on in the greenhouses, so that much of the space and time formerly given to the culture of plants and flowers for decorative purposes will in future have to be given to classes and experimental work.

Two houses will now be devoted entirely to the growing and forcing of vegetable crops, and two to the culture of flowering and ornamental plants, particularly those adapted to the requirements of home decoration.

While the largest house of all, what was formerly the old conservatory, will be used as a laboratory or work house for our ever-increasing classes of boys and girls.

Addition to Collection of Wax Models.

One of the features of greatest interest to visitors at the College of late years has been the valuable collection of models of fruits and vegetables in the Horticultural section of the College Museum. These wonderful reproductions are made for us from the natural specimens by Mrs. Stanley Potter, who has been engaged at this work here for some time. This year she has, among other things, made a specialty of representing the effects of fungus diseases and insects upon fruit and vegetables, and has also been making for us a collection of the edible fungi and the poisonous species likely to be mistaken for them. We hope to keep her at this work till our collection is the most complete of its kind to be found anywhere on the continent.

Co-operative Experiments in Fruit Growing.

During the past ten years extensive variety tests with a great number of fruits have been carried on at the College and at the twelve Ontario Fruit Experiment Stations in various parts of the Province. These tests have enabled us to determine what are some of the best varieties of each kind of fruit for the sections in which they have been tested. Through the agency

of the Experimental Union we have been distributing throughout the Province these leading varieties, that they may be further tested in every township of the Province, and in this way each grower may select for himself and grow more extensively the varieties which give the best results on his own particular farm. About 2,000 experimenters are already engaged in this work, and we desire the co-operation of all who are interested in fruit-growing.

Details of this experimental work in horticulture are given in the Report of the Experimental Union, which may be had an application to the Department of Agriculture, Toronto.

The plants are sent by mail free of any expense. All that we require before sending plants is a promise that the experimenter will try to follow the directions and will report the results each year when required to do so. Anyone in Ontario who wishes to join in this work next spring may do so by selecting any one of the experiments and agreeing to follow the directions given and to report the results as required. Applications should be made to H. L. Hutt, Ontario Agricultural College, Guelph.

Co-operative Experiments with Tomatoes.

A co-operative experiment was undertaken this year for the purpose of determining which are the best varieties of tomatoes, both from the grower's and the canner's standpoints. Seed was selected of twelve of the leading varieties, and furnished to a few of the most successful tomato growers in those sections where canning factories have been established. This experiment was conducted in the following districts: Sandwich, Leamington, Dresden, Dunnville, St. Catharines, Jordan, Grimsby, Hamilton, and Burlington.

From all of these places we have received reports of successfully conducted experiments, which go to show that the varieties in favor by the growers vary somewhat in different parts of the Province.

At each place where the experiment was conducted, the manager in charge of the canning factory was asked to report upon the quality of the varieties for canning purposes, and some of these reports show that the varieties most profitable for the grower are not always the best for the canning factory. A fuller report of this experiment will be brought out later in the form of a bulletin.

Exhibit Made at Toronto.

An educational exhibit was made by this department at the Ontario Horticultural Exhibition held in Toronto from Nov. 5th to 10th. This exhibit was made up of a large number of varieties of fruits and vegetables grown at the College, and Mr. H. S. Peart was in attendance during the whole time of the exhibition to give information regarding the exhibit and the work in progress at the College.

Acknowledgments.

In closing this report I wish to thankfully acknowledge the hearty co-operation and assistance we have received from the other departments of the College, and to one and all in this department who have labored with me to make the work of value to our students and the public at large.

Respectfully submitted,

H. L. HUTT.

PART XII.

THE PROFESSOR OF ANIMAL HUSBANDRY AND FARM SUPERINTENDENT.

To the President of the Ontario Agricultural College:

SIR,—I have the honor to submit herewith the report for my department. This report covers the whole work of the department, including that performed by my assistant, Mr. H. S. Arkell, who has taken an active part in planning and conducting experiments, as well as in the work of instruction.

Teaching, as heretofore, has been an important feature of our work during the year. It includes a great deal more than our work with the regular college students, and takes in our work with the short course students, farmers' institutes, stock judging classes, and a variety of public meetings with similar objects, together with answers to questions received through the mail. This part of our work, however, scarcely admits of a detailed report, as it would not be of general interest.

FARM SUPERINTENDENCE.

The rotation and the methods of cultivation in practice upon the College farm are fully described in previous reports, and, as these reports are available to the public, I beg leave to omit a repetition of the description in this report.

Crops.—Our crops during the past season were, approximately, as follows:

81 acres hay, of which 57 acres was first crop of mixed timothy and clover, and the balance second year meadow, which was mostly timothy. The average yield was a little over two tons per acre.

38 acres Mandscheuri barley. This variety of barley continues to give good satisfaction. This year's crop is not yet threshed, but it was a very heavy crop, and should run close to 60 bushels per acre.

96 acres Siberian oats. The oats were very heavy in the straw and lodged badly. Owing to this fact, the sample is not good, though the yield will be very fair. Only part of the oats are as yet threshed.

10 acres Giant Yellow Intermediate mangels. This year the mangels were sown on ridges. Germination was good, and the yield 980 bushels per acre.

4 acres Magnum Bonum Swede turnips. The yield was 600 bushels per acre.

8 acres Empire State potatoes. In spite of repeated spraying, a sort of dry rot struck the potatoes, cutting the yield down to 93 bushels per acre.

21 acres White Cap Yellow Dent corn, for the silo. This variety has given xcellent satisfaction the past two years, being a good yielder and maturing early. The yield this year was about 15 tons per acre of exceptionally well eared and well matured corn.

In addition to the above mentioned crops, we had about 10 acres of rape and 60 acres of pasture. The mixture which we sowed this year for a two-year pasture, comprised 5 pounds orchard grass, 4 pounds timothy, and 8 pounds red clover per acre. This mixture has given very good satisfaction in the past.

Live Stock.

An important addition to the live stock was made last February, by the purchase of three pure-bred Clydesdale mares from Mr. Robert Davies, Todmorden. Two of these mares were in foal, and we unfortunately lost one of them in foaling. The most valuable mare, however, gave us an excellent colt foal by Right Forward, the champion Clydesdale stallion at Toronto this year. If this branch of our work is to be developed, additional accommodation will be necessary.

Important additions have also been made to our other classes of stock, and we feel that we are in a better position than ever before to do effective work in live stock breeding.

Investigation.

Our investigations during the year have dealt with the relative value of short keep and long keep steers for feeding purposes; the relative merits of feeding steers in loose boxes and tied in stalls; the cost of raising pigs from birth to market; and a commencement in the cross-breeding of swine, though the last mentioned branch of our work has not been carried far enough to justify a detailed report.

Through the liberality of the Wm. Davies Co., of Toronto, we have also been able to carry on some important co-operative experiments with swine, and a report upon this work, so far as it has gone, is appended. This is not the first time we have received valuable assistance from the Wm. Davies Co., and we take pleasure in acknowledging our great obligation to this progressive firm.

EXPERIMENTS WITH LIVE STOCK.

Cost of Raising Pigs.

This work was begun last year, and has been continued throughout the present year. There are numerous factors entering into such an investigation, almost any of which might be made the subject of controversy, therefore it has been thought advisable to repeat some of the discussion which appeared under this head in last year's report.

Valuation of Foods.—This is a question upon which it is impossible to secure unanimity of opinion. If all foods had to be purchased, it is quite manifest that the foods should be charged against the pigs at exactly what they cost. In the case of home grown foods, however, the question is complicated. In the first place, the trouble of cleaning and marketing is avoided, and, secondly, a great deal of small, unmarketable grain and seeds are included in the grain ration. Then again, prices vary from time to time, and in calculations of this kind, it is desirable to fix fair average prices which are likely to prevail for a number of years. The feeder must also study the market for cheap foods. If he makes an injudicious selection of foods, it is not fair to lay the blame upon the animals. For example, bran can be bought in Guelph at $17.00 per ton, middlings run from $19.00 to $20.00 per ton, and feeding barley can generally be bought off farmers' waggons at from 45 cents to 47 cents per bushel. On the other hand, oats, peas and corn are so dear at present as to be practically out of the question for

hog feeding, unless for some special purpose where cost is a secondary consideration. Therefore, if the feeder is careful in the selection of foods, and if some allowance is made for the unmarketable grain included in home grown feed, we think that a valuation of $20.00 per ton for meal, including bran and middlings, is not unreasonable. As to other foods, we have valued skim milk at 15 cents per cwt. and roots at $2.00 per ton.

Cost of Maintaining Sow.—This is a matter upon which there may be some controversy. We have figures representing the actual cost of feeding sows while suckling pigs, but the cost of maintaining sows between litters is rather difficult to arrive at, owing to the fact that pasture plays an important part in the maintenance, and many foods can be used which have very little market value. We think, however, that we are making a liberal estimate when we place the cost of maintaining a sow which is not suckling pigs at 75 cents a month. At some seasons it will be more, but at other times it will be decidedly less, and we think 75 cents per month is a reasonably liberal average allowance. Therefore, if the sow raises two litters of pigs during the year, and nurses each litter six weeks, it will leave about nine and one-quarter months of maintenance between litters, which, at 75 cents per month, amounts to $6.94, or say $7.00. Half of this amount, or $3.50, must, therefore, be charged against each litter, in addition to the cost of food consumed by sow and pigs before the pigs are weaned.

Valuation of Sow.—A young grade sow about eight months old and not bred, can be bought at a very reasonable price, and after the farmer is through with her, he can sell her for practically as much as she cost, provided she makes a reasonable growth and is well cared for. For this reason, we are omitting the value of the sow from the calculation.

Risk.—This is a factor which is very difficult to deal with, and because there are no means of arriving at a satisfactory basis for an estimate, we are leaving the element of risk out of the calculation.

Labor and Manure.—The amount of labor involved depends upon conveniences, methods of feeding, and the number of pigs, the cost of labor per pig being less where a large number of pigs is involved than when only a few are kept. It must not be forgotten, however, that if the pigs are to be charged with every item of expense, they should also be credited with everything they produce, and a product of considerable value is their manure. But, to arrive at a fair and reasonable valuation of the manure is no simple matter, so, to simplify the calculation, we shall make no charge for labor, and allow no credit for manure. This method is not scientific, and no doubt it is not exact, but it possesses the merit of simplicity, and the difference, one way or the other, between the values of these two items, cannot affect the calculation in hand to any material extent.

Cost of Maintaining Sow and Pigs.—In this calculation, only the food consumed by the sow and young pigs during the nursing period is considered. Twelve litters of pigs enter into the calculation. The pigs were weaned at six weeks old. The ration was composed mainly of middlings and bran in the proportion of 2 to 1 by weight. Sometimes a small proportion of ground oats was added to the ration, the oats being ground in the condition in which they came from the threshing machine. Sometimes skim milk was available, but at other times it was not. All food was carefully recorded and valued as previously described. The following table gives particulars regarding each litter:

Cost of Maintaining Sow and Litter for Six Weeks.

Sow and Litter.	No. of Pigs in Litter.	How Bred.	Cost of Feeding Sow and Litter.
			$
No. 1	4	Pure York	3.20
No. 2	9	Berk. boar, Tam. sow	3.08
No. 3	6	Pure York	3.87
No. 4	5	York. boar, Tam. sow	3.70
No. 5	8	York. boar, Tam. sow	3.04
No. 6	3	York. boar, Berk. sow	5.85
No. 7	9	Berk. boar, York. sow	4.31
No. 8	8	Pure York	4.33
No. 9	8	Pure Tam	3.88
No. 10	8	York. boar, Tam. Sow	3.94
No. 11	6	Tam. boar, Berk. sow	3.33
No. 12	4	Tam. boar, Berk. sow	2.37
Average	6½		3.74

From the above table it will be seen that the twelve litters averaged 6½ pigs each, and that the average cost of the food consumed by the twelve sows and their litters for a period of six weeks was $3.74.

Total Cost of Pigs Until 6 Weeks Old.—To arrive at the total cost of a litter of pigs until they are weaned, we must add any other legitimate charges to the sum of $3.74, as given above. If the sow produces two litters per year, which is a fair assumption, we should charge against each litter one-half of the cost of maintaining sow when not nursing pigs, together with service fee. Therefore, if we omit the items of interest on investment, risk, labor, and value of manure, and charge meal at $20.00 per ton, skim milk at 15c. per cwt., roots at $2.00 per ton, and maintenance of dry sows at 75c. per month, the bill against the average litter of pigs used in this experiment would be as follows:—

Service fee	$1 00
Cost of maintaining dry sow (½ of $7.00)	3 50
Cost of food for sow and litter	3 74
Total	$8 24
Average number of pigs in litter	6½
Average cost per pig 6 weeks old	$1 27

The average cost of a pig at six weeks old as shown by this experiment, corresponds very closely with our results of last year, and indicates that it is very much cheaper to raise pigs than to buy them.

Cost of Finishing for Market.—The pigs in litter No. 1 were not finished for market, being sold for breeding purposes at an early age. Litters No. 2 to No. 6, inclusive, have been marketed, and the following table gives details regarding them:

Table Showing Cost of Finishing Five Litters for Market.

	Litter No. 2. Berk. boar, Tam. sow, 9 pigs.	Litter No. 3. Pure York. 6 pigs.	Litter No. 4. York. boar, Tam. sow, 5 pigs.	Litter No. 5. York. boar, Tam. sow, 8 pigs.	Litter No. 6. York. boar, Tam. sow, 3 pigs.	Average.
	$	$	$	$	$	$
(*a*). Cost of food, birth to weaning	3.08	3.87	3.70	3.04	5.85	3.91
(*b*). Cost of food, weaning to marketing	62.10	35.93	37.47	59.95	14.95	
(*c*). Cost of food, birth to market.	65.18	39.80	41.17	62.99	20.80	
(*d*). Live weight when marketed.	1468 lbs.	993 lbs.	906 lbs.	1522 lbs.	586 lbs.	Per pig 176 lbs.
(*e*). Cost of food per lb. live wt., birth to market	4.44	4.00	4.54	4.14	3.55	4.20
(*f*). Total cost of pigs, including service fee and maintenance of dry sow	69.68	44.30	45.67	67.49	22.30	
(*g*). Total cost per lb., including service fee and maintenance of dry sow	4.74	4.46	5.04	4.43	4.31	4.61

Explanatory Notes.

1. It should be explained that the pigs used in this experiment were late summer and fall litters, and that they were all fed throughout the winter of 1905-06. The litters were marketed March 3rd, April 6th, May 8th, June 8th, and August 9th, respectively, so that, with the greater number of pigs the main part of the feeding was done throughout the winter.

2. It will be noted that the average cost from birth to weaning of these five litters is higher than the average of the twelve litters included in the previous table. This is due to the fact that Litter No. 6 is included in the average, and this litter, for some reason, cost very much more than any other. Of course, it was also included in the other average, but it has more influence upon the average when it is one of five, than when it was only one of twelve litters.

3. The figures opposite division (f) of the table were obtained by adding a fixed charge of $4.50 to the cost of food from birth to market, as shown opposite division (e) of the table. This fixed charge, as previously explained, is made up of $1.00 for service fee, and $3.50 for half the cost of maintaining the sow when not nursing pigs. Of course, the addition of a fixed charge of this kind makes a greater difference in the total cost per pound of a small litter than it does in the case of a larger litter, and since two of the five litters are decidedly small, we are inclined to regard the average total cost per hog of $4.61, as rather extreme. However, we shall be able to speak more definitely upon this point when more pigs have been marketed.

4. It is too soon to say anything regarding the relative merits of different crosses. As an example of the influence of individuality, it is interesting to compare litters No. 4 and No. 5. Though bred the same way, by the same boar and out of sows closely related, there is a marked difference in the cost of food per pound live weight.

5. Until further work has been performed, these results must be regarded as merely tentative.

Co-operative Experiments with Swine.

This work supplements our own investigations in connection with the cost of raising hogs for market. The work was made possible by the Wm. Davies Co., Limited, of Toronto, who generously offered to pay for finished hogs, 50 cents per cwt. above the market price prevailing at the time they were marketed, to farmers who would render a full report upon the food consumed by the hogs from weaning until marketed, and upon certain other points necessary to an intelligent study of the question. The details of the work were entrusted to our department, and, up to the time of writing, ten reports have been received from farmers who conducted experiments according to directions. The work, so far as we know, is unique, and the results should be of interest and value to those interested in this important industry. It should, perhaps, be explained that the farmers were allowed to feed the pigs in their own way, and the only rules prescribed were those pertaining to the nature of the facts to be reported. Each report bears a declaration, signed by the experimenter that it is correct.

Cost of Young Pigs.—In our own experiments with 12 litters, the average cost per pig, counting everything (except risk) which we thought could be fairly charged against each litter, was $1.27 at weaning time. To be on the safe side, however, we have charged the pigs used in these experiments at $1.50 each, at weaning time. It must be remembered that the prime object of all this work is to increase our knowledge of what it *costs* the farmer to *raise* pigs and finish them for market. In our general average, however, we have also worked out the cost of these hogs on the basis of $2.50 each for pigs at weaning time, for the satisfaction of those who *buy* young pigs for feeding.

Valuation of Foods.—For what may be called supplemental foods, we have used the following values: Skim milk and buttermilk, 15c. per cwt. Roots, $2.00 per ton. Green foods, $2.00 per ton. Whey, 4c. per cwt. These values may be open to question, but it is the meal ration which has the greatest influence upon the cost of feeding, and it will be noticed in the table that we have worked out the cost per pound on the basis of four different values for meal, viz., $20.00, $21.00, $22.00, and $23.00 per ton; our desire being to show what might be regarded as the extreme limit of cost. The term meal includes bran, shorts, etc., as well as ground grain. We could not use the values furnished by our experimenters, because it was necessary to have uniformity of values for purposes of comparison. The exception to this rule will be found in the column under the heading "food consumed." Where values for pasture and miscellaneous foods appear in this column, they represent the values attached to these foods by the experimenters, with the exception of Lot 8, where we added what we thought a rather excessive charge for pasture, judging by the statement of what the pigs received.

The table which follows looks somewhat formidable, but it is a table of such exceptional interest that we cannot see any way of curtailing it without detracting from its value. Every lot is worthy of study, and a more intelligent understanding of the general averages will be obtained by studying the figures from which they were computed.

Table I.—Details of Co-operative Experiment.

Lot.	No. of Pigs.	How bred.	Cost of Pigs when weaned.	Age when sold.	Weight when sold.	Food Consumed.	Cost per lb. when Meal is worth per ton— $20.00	$21.00	$22.00	$23.00
			$	Days.	lbs.		c.	c.	c.	c.
No. 1...	9	York. boar, Grade Tam and Chester White sow.....	13.50	217	1,800	Barley, 3,552 lbs.; shorts, 905 lbs.; mangels, 740 lbs.; green clover, 2,850 lbs.; milk, 1,620 lbs.....	3 56	3.68	3.80	3.93
No. 2...	12	Yorkshire.....	18.00	224	2,425	Barley, 5,374 lbs.; shorts, 1,169 lbs.; mangels, 815 lbs.; green clover, 3,900 lbs; milk, 2,160 lbs.....	3.77	3.90	4.04	4.17
No. 3...	12	Yorkshire.....	18.00	247	2,360	Meal (barley, shorts, peas, oats), 7,333 lbs.; mangels, 545 lbs.; milk, 2,520 lbs.....	4.05	4.21	4.36	4.52
No. 4...	10	Yorkshire.....	15.00	238	2,050	Meal (barley, peas, oats), 5,171 lbs.; shorts, 1,038 lbs.; mangels, 3,200 lbs.; milk, 2,050 lbs.....	4.05	4.21	4.36	4.52
No. 5...	7	Berk. boar, York. sow.....	10.50	233	1,525	Barley, 1,960 lbs.; wheat, 1,300 lbs.; oats, 800 lbs.; mangels, 6,000 lbs.; milk, 8,800 lbs.....	4.58	4.71	4.84	4.97
No. 6...	10	York. boar, Tam. sow.....	15.00	177	2,060	Meal (barley, oats, wheat, peas), 4,215 lbs.; shorts, 816 lbs.; whey, 15,000 lbs.; miscellaneous foods valued at $5.00.....	3.70	3.82	3.94	4.07
No. 7...	14	Yorkshire.....	21.00	213	2,740	Barley, 1,243 lbs.; shorts, 4,680 lbs.; corn, 1,585 lbs.; milk, 9,330 lbs.; small potatoes (3 bags) and pasture, valued at $5.90.....	4.20	4.33	4.47	4.61
No. 8...	7	Yorkshire grade...	10.50	194	1,300	Meal (barley and oats) 2,230 lbs.; shorts, 274 lbs.; milk, 3,960 lbs.; pasture and green feed valued at $5.00.....	3.57	3.67	3.69	3.36
No. 9...	14	Berk. boar, grade York. sow	21.00	179	2,740	Meal (barley and peas) 10,016 lbs.; mangels, 3,300 lbs.; milk, 4,020 lbs.....	4.76	4.94	5.12	5.31
No. 10..	8	Tam. boar, grade York & Tam. sow	12.00	200	1,740	Barley, 3,115 lbs.; shorts, 390 lbs.; mangels, 600 lbs.; milk, 1,200 lbs.; 51 days on stubble, without other food.....	2.84	2.94	3.04	3.14

Comments.

1. A peculiar feature of the experiment is the predominance of Yorkshire blood in the pigs used. This probably has no significance, but it may call for the explanation that no stipulation was made in the conditions of the experiment, regarding the breeds to be used. Any breed, grade, or cross was eligible.

2. There is a remarkable coincidence in lots 3 and 4. The cost per pound of these two lots is practically the same, yet one lot was fed in Ontario county, and the other in Bruce.

3. Another coincidence occurs in lots 7 and 9, both as regards number of pigs and market weight, yet one of these lots came from Ontario county, and the other from Waterloo, points widely distant.

4. As previously explained, the pigs are valued at $1.50 each at weaning time, which is considerably above the actual cost shown by our experiments.

5. Lot 7 was made up of two litters, born the same day, but marketed about a month apart. The 213 days represent the average age of these pigs when marketed.

6. It will be noted that each lot was well up to, and that some of them were above market requirements as to weight. The weights were taken from duplicate weigh tickets, issued by the weighmaster where the pigs were marketed.

7. The cost of gain is more uniform than one might expect from hogs fed under such widely different conditions. Lots 9 and 10 are the two extremes, and call for special notice.

8. It is hard to understand the high cost per pound in the case of lot 9. Looking at the ration which was used, we must say that barley and peas do not look like a good meal ration for very young pigs. On the other hand it must be admitted that the pigs made remarkably good gains, as they were scarcely six months old when marketed, and averaged 195 pounds. It is possible, however, that though the pigs were not injured, they did not make the best use of the meal and that there was waste from this cause. If it does nothing else, this group illustrates the point that rapid gains are not necessarily cheap gains.

9. In the case of lot 10 the owner had a field of mixed oats and barley which was very badly lodged. Consequently there was a great deal of grain left on the ground after harvest. The pigs were turned on the stubble August 1st, and stayed there until September 20th, receiving no food but what they gathered for themselves during that time. As it is manifestly impossible to place a value upon such food, this group is not included in the general average, but it is inserted in the table as an example of how farm animals can frequently make profitable use of what would otherwise be wasted.

Table II.—Averages.

	When meal is worth per ton—			
	$20.00	$21.00	$22.00	$23.00
	$	$	$	$
Average cost per pound of 95 pigs, omitting lot 10, when pigs cost $1.50 each at weaning time	4.07	4.21	4.35	4.49
Average cost per pound of 95 pigs, omitting lot 10, when pigs cost $2.50 each at weaning time	4.57	4.71	4.85	4.99

Average age at which pigs were weaned, 52 days.
Average age at which pigs were marketed, 214 days.
Average live weight of pigs when marketed, 200 lbs.

Comments.

1. In both tables there is much of encouragement to swine breeders and feeders. The general average shows results from 95 hogs fed upon eight different farms, and reflects great credit upon the skill of the feeders.

2. That the average cost per pound should be within 5c., when meal is valued at $23.00 per ton, and the pigs at $2.50 each when weaned, is much beyond our expectations.

3. We regard $20.00 per ton a fair valuation of meal when the grain is home grown, as it includes much that is not marketable. Even when much of the feed has to be bought, we believe that, with a little foresight, the meal bill can be kept well under $22.00 per ton. If the farmer buys injudiciously, or uses unnecessarily high priced foods, he should not blame the pigs.

4. These experiments show cheaper average gains than were obtained in our own work, but most of these experiments represent summer feeding, whereas most of our feeding was done during the winter.

5. The experimenters who conducted this work are Messrs. W. J. Cunningham, Nicolston; J. A. McKenzie, Columbus; Robt. Bray, Walkerton; James Scott, Galt; I. T. Gleason, Lakeside; W. G. Smale, Woodville; W. A. Rowand, Walkerton; Geo. Johnson, Cannington.

Fattening Steers for Export.

Short Keep vs. Long Keep Steers.

By a short keep steer, we mean one which has sufficient weight and flesh at the time of purchase, that he can be made ready for export in from two to three months of stall feeding. By a long keep steer, we mean one which requires five or six months of stall feeding before ready for export. It is a difficult matter to decide which of these classes is the more profitable to handle at prevailing prices, because the short keep steer always costs more per pound than the long keep, and it is important for the farmer to know whether there is as much difference in value as the market demands. The problem is complicated by the fact that there are different grades of short keep and long keep steers, some steers being of much better quality than others; but in these experiments we aim to select reasonably good average steers of the two classes.

Plan of Experiment.—In this experiment the short keep steers are divided into two groups, the heavier ones being put in one group, and the lighter ones in another. There were 11 steers in each group. The object was to market the heavy steers first, and thus have two grades of short keep steers; but, as it turned out, both groups were ready for market at practically the same time, and both went away together. They are reported separately because the method of feeding was somewhat different, the heavier group being fed a heavier meal ration. The short keep steers were fed for a period of sixty days.

A group of lighter and thinner steers was purchased to represent long keep steers. These steers were fed the same kinds of food used for the others, but the meal ration was increased much more slowly, and they were on experiment 153 days. Originally, there were eight steers in this group, but one of them turned out badly, and was discarded as unsuitable for experimental work. Only seven steers, therefore, are included in the report upon long keep steers.

Feeding.—All the steers were fed at first a mixture of cut hay, pulped roots, and silage, mixed in the proportion of approximately, 1 of hay, 2 of roots, and 3 of silage, by weight, but it was found necessary to reduce the amount of silage considerably, after about six weeks of feeding.

During the first month of the experiment, all the steers were fed a meal ration consisting of 1 part of bran to 3 parts of ground barley by weight. After this time a small proportion of ground oats and corn was added to the mixture, but barley and bran constituted the main part of the meal ration throughout the experiment.

The heavy short keep steers were started on about 5 pounds of meal each per day, and the quantity increased, until, before the close of the experiment, they were getting about 10 pounds of meal each per day. Their

average daily consumption of meal amounted to .607 pounds meal (a little less than 2-3 of a pound) for every 100 pounds of their average live weight.

The lighter short keep steers were started on about 4½ pounds of meal each per day, and the quantity was increased more slowly. The average daily consumption of meal for this group amounted to .556 pound meal (a little less than 3-5 of a pound) for every 100 pounds live weight of the animals.

The long keep steers were started on about 4 pounds of meal each per day, and increased very slowly. Their average daily consumption of meal was .489 pound meal (less than ½ pound) for every 100 pounds of their average live weight.

The meal was fed in two feeds on top of the mixture of hay, roots, and silage.

Value of Foods.—The foods are valued as follows: Meal, $20.00 per ton; Hay, $8.00 per ton; Roots, $2.00 per ton; Silage, $2.00 per ton. For a discussion of the valuation of foods, see report upon swine experiments. It must also be remembered that values fluctuate considerably, and we wish to use what will represent fair values, which may be employed from year to year. Furthermore, this experiment is concerned with the relative merits of different classes of feeding steers, whereas the profit or loss upon a given operation in steer feeding is often affected quite as much by skill, or luck, in buying and selling, as by skill in feeding. Whether the values we employ be high or low, they will enable us to compare these groups of steers, and that is the only object we have in view.

Table Showing Weights, Gains, Food Consumed, Cost of Gain, etc.

	Group I., 11 steers. Heavy Short Keep.	Group II. 11 Steers. Lighter Short Keep.	Group III. 7 Steers. Long Keep.
Average weight of steers at commencement of experiment	1454.1 lbs.	1267.7 lbs.	1053.5 lbs.
Average weight of steers at close of experiment	1550.9 lbs.	1357.7 lbs.	1302.1 lbs.
Average gain per steer	In 60 days. 96.8 lbs.	In 60 days. 90.0 lbs.	In 153 days. 248.6 lbs.
Average daily gain per steer	1.61 lbs.	1.5 lbs.	1.62 lbs.
Food consumed	Meal ... 6,025 lbs. Hay .... 4,820 " Roots... 9,560 " Silage ..13,100 "	Meal ... 4,905 lbs. Hay ... 4,700 " Roots... 9,280 " Silage...12,910 "	Meal ... 6,181 lbs. Hay ....10,529 " Roots...23,563 " Silage...19,970 "
Value of food	$102.18	$90.04	$147.46
Cost of 1 lb. increase	9.59c.	9.09c.	8.47c.
Average meal consumed per steer, per day, per 100 lbs. live weight	.607. lb	.566 lb.	.489 lb.

Explanatory Notes.

1. It will be noticed that the gains are not large. This is probably due to some trouble we had with the steers. The silage on the top of the silo contained very little grain, but after about six weeks, silage was reached that was rich in grain, and the result was that the steers commenced to scour. The proportion of silage in the ration was reduced, and the trouble stopped in a very short time, but we feel sure that it interfered very materially with the gain in weight.

2. It will be noted also that the cost of a pound of increase in weight was highest in the case of the heavy short keep cattle, and lowest in the case of the long keep steers. This result is quite in accord with previous experiments, where we found that, invariably, a heavy meal ration resulted in higher cost per pound increase in weight.

3. The cost of producing the increase in weight, however, is not the only factor in determining the relative profits or losses in feeding the different kinds of steers. The weight of the steer when purchased is an important factor, as is also the condition of the steer when purchased. This can be shown by working out an example. Let us assume that all these steers were sold at the same price, say 5c. per pound, and that the long keep steers cost 4c. per pound. This assumption happens to fit the facts of the case, as the long keep steers cost 4c. per pound, and both long and short keep steers were sold at 5c. per pound. Let us take an average long keep steer (weight when bought, 1,053½ lbs., weight when sold, 1,302 lbs.) and determine the profit or loss according to the values we have attached to the foods:

Cost price of steer, 1,053½ lbs. at 4c	$42 14
Value of food	21 06
Total cost	$63 20
Selling price, 1,302 lbs. at 5c	$65 10
Profit above market value of food	1 90

Now, let us take an average heavy short keep steer, and determine what we could afford to pay for him so that we could sell him at 5c. per pound, and get back the value of his food, and profit of $1.90 above the value of the food, as in the case of the long keep steer. To do this, we must deduct from his selling price the value of the food he consumes, and the profit made on the long keep steer. Thus:

Selling price, heavy short keep steer, 1,551 lbs. at 5c	$77 55
Deduct: Value of food, $9.29 Profit, $1.90	11 19
Value of steer when bought, to give same results as long keep steer	$66 36

That is to say, we could have paid $66.36 each for this bunch of heavy short keep steers, and have secured the same profit per head above value of food, as we did in the case of the long keep steers.

But these heavy short keep steers averaged 1,454 lbs. when bought; therefore, if 1,454 pounds are worth $66.36, 100 lbs. would be worth $4.56. In other words, if we had paid $4.56 per cwt. for the heavy steers, and $4.00 per cwt. for the long keep steers, in this particular case, and sold them all at 5c. per pound, we would have had exactly the same profit per steer above market value of the food.

When we work out the lighter short keep steers in the same way, we find that they would be worth $4.55 per cwt. as compared with the long keep steers at $4.00 per cwt., and the heavy short keep steers at $4.56 per cwt.

4. The results of this experiment, and the discussion up to this point, suggest two important questions which should be perfectly understood by every man who buys cattle for feeding. The questions are as follows:

(*a*) Why is it that though the lighter short keep steers were fed more economically than the heavy ones, and made their increase in weight at a lower cost per pound, they would still have to be bought at a shade lower price per cwt. than the heavy steers, in order to give the same profit?

(*b*) Why is it that there should be such a wide difference (55c. per cwt.) between what a farmer could afford to pay per cwt. for the long keep steers, and the lighter short keep steers; and such a narrow difference (1c. per cwt.) between what he could afford to pay for the lighter short keep, and the heavy short keep, considering that the long keep steers made their increase in weight 62c. per cwt. cheaper than the lighter short keep, whereas the lighter short keep made their increase in weight only 50c. per cwt. cheaper than the heavy short keep steers?

The answer to question (*a*) is simple, if we remember that the farmer's profit is made by increasing the value per pound of the original weight of the steer. Thus, if he increased the value of the original weight of the heavy short keep steers by 1 cent per pound, the increase would amount to $14.54 per head; whereas, in the case of the lighter short keep steers, an increase of 1 cent per pound in the value of the original weight, would amount to only $12.67 per head, making a difference of $1.87 per head in favor of the heavier steers. The more economical method practised in feeding the lighter short keep group, very nearly wiped out this difference, but there would still be a slightly larger profit on the heavier steers, if both groups had been bought at the same price and sold at the same price per pound.

Question (*b*) is more complicated. In the first place, the short keep steers were heavier, and this fact counted in their favor as explained under question (*a*). But another important factor enters into this problem, viz., the long keep steers were thinner than the short keep, and had to be increased in weight 248.6 pounds per head before they were finished, whereas, the short keep steers were finished by increasing their weight only 90 pounds per head. If this increase in weight could be sold for as much per pound as it costs, it would make little difference whether the steer were thin or fleshy when bought, but such is not the case. If both these lots were sold at 5 cents per pound, there would be a loss of 4.09 cents per pound of increase in the case of the short keep steers, and a loss of 3.47 cents per pound of increase in the case of the long keep cattle. (See table for cost per pound increase.) Let us see how this works out:

Total loss per head incurred on increase in live weight necessary to finish cattle for export:

Long keep steers, 248.6 lbs. at 3.47c	$8 63
Short keep steers, 90 lbs. at 4.09c	3 68
Difference	$4 95

Thus, while the loss is less per pound of increase in the case of the long keep steers, yet the total loss is greater, owing to the fact that more pounds of increase were necessary to finish them.

Now, the only way to make up this loss, is to increase the value per pound of the original weight of the steer, and, therefore, the greater the loss to be made up, the greater must be the increase in the value per pound of the original weight of the steer.

From what has been said, it will be seen that the light short keep steers, as compared with the heavy short keep steers, labored under only one dis-

advantage, viz., they were lighter in weight; but the long keep steers as compared with the short keep steers, were under a double disadvantage, in that they were both lighter and thinner.

5. The points brought out by this experiment may be summarized as follows:

(1) To feed steers cheaply, the meal ration should be kept as low as possible consistent with securing a reasonable gain in weight.

(2) Heavy, fleshy (short keep) steers may be fed a heavier meal ration per 100 lbs. live weight, than lighter and thinner steers, and give an equal profit, making allowance for their greater first cost per pound.

(3) The lighter and thinner the steers, the greater the need for economizing in regard to the meal ration.

(4) Condition being equal, heavy steers are worth more per pound to buy as feeders, than lighter ones, the selling price per pound being the same.

(5) Weight being equal, a fleshy steer is worth more per pound to buy as a feeder, the selling price per pound being the same.

(6) The lighter and thinner the steer, the greater the "spread" between the buying and selling price per pound necessary to compensate the man who feeds him.

(7) In this experiment, steers which weighed 1053.5 pounds each when bought, which were increased 248.6 pounds each in weight, and were sold at 5c. per pound, required a "spread" of $1.00 per cwt. between the buying and selling price, to give a profit of $1.90 per head above value of food; whereas a "spread" of only 45c. per cwt. between the buying and selling price, gave an equal profit per head on steers sold at the same price per pound, which weighed 1267.7 pounds each when bought, and required to be increased in weight only 90 pounds per head in order to finish them.

(8) The results of this experiment must not be regarded as conclusive. They indicate, however, what may happen in feeding steers, and seem to be in accord with the best practice in steer feeding. We expect to have further figures upon this subject next year.

Feeding Steers Loose vs. Tied.

In this comparison, one group of steers is represented by the eleven lighter short keep steers, mentioned in the previous experiment. Unfortunately, we have accommodation for only four steers to run loose, so that the groups are unequal in numbers. The steers fed loose were dehorned before they were bought.

The method of feeding the lighter short keep steer has already been described, and the loose steers were fed the same ration. On the whole, however, they consumed slightly more meal than the tied steers, though an effort was made to keep the meal ration as nearly alike as possible in quantity for the two lots.

The steers fed loose were not affected by scouring as were those tied in the stalls, and no doubt a good deal to their advantage over the tied steers is due to this fact. It indicates, however, that steers running loose are less liable to scour than those kept tied, which may be taken as one of the advantages of loose feeding.

Table Showing Weights, Gains, Food Consumed, Cost, etc.

	Group I. 11 Steers. Tied.	Group II. 4 Steers. Loose.
Average weight per steer at commencement of experiment	1267.7 lbs.	1212.5 lbs.
Average weight per steer at close of experiment	1357.7 lbs.	1351.2 lbs.
Average gain per steer in 60 days	90.0 lbs.	138.7 lbs.
Average daily gain per steer	1.5 lbs.	2.31 lbs.
Food consumed	Meal... 4,905 lbs.	Meal... 1,777 lbs.
	Hay ... 4,700 "	Hay ... 1,990 "
	Roots .. 9,280 "	Roots, . 3,910 "
	Silage .. 12,910 "	Silage .. 5,560 "
Value of food	$90.04	$35.20
Cost of 1 lb. increase in weight	9.09 c.	6.34 c.
Average meal consumed per day, per 100 lbs. average live weight	.566 lb.	.577 lb.
Profit per steer, above first cost and value of food	$4.56	$6.02

Explanatory Notes.

1. It will be noticed that the loose steers made a much greater gain than those kept tied, and at a much smaller cost per pound.

2. As stated before, no doubt much of this advantage was due to the fact that the loose steers suffered no set back from scouring.

3. The steers cost $4.35 per cwt., and were sold at $5.00 per cwt. This is a comparatively small "spread" between cost and selling price per pound, yet it leaves a margin on the right side of $4.56 per head in the case of the tied steers, and $6.02 per head in the case of the loose, above first cost and value of food.

4. The difference of profit in favor of the loose steers would have been greater if the loose steers had been of the same weight as the tied. It will be noticed by the table that they were rather lighter steers, and were thus at a disadvantage as previously explained.

5. As in the previous cases, these results must not be taken as conclusive. We are repeating this feature of the work along with the others, and expect to have additional data next year.

Respectfully submitted,

G. E. DAY.

PART XIII.

PROFESSOR OF FIELD HUSBANDRY AND EXPERIMENTALIST.

To the President of the Ontario Agricultural College:

Sir,—I have the honor of submitting herewith a report of the work done in the Department of Field Husbandry for the year 1906. At the close of the year 1905, Prof. C. A. Zavitz was granted a year's leave of absence from duty, and I was given charge of the work of the Department during his absence. The work of the year has been arduous, but on the whole pleasant, and I have been cheerfully and ably assisted by Mr. W. J. Squirrell in the delivering of lectures and the general work of the department, by Mr. H. G. Bell, B.S.A., in the work of plant breeding, and by Mr. A. E. Whiteside, who has been foreman of the field work for some years. At the end of April, Mr. C. C. Thom, B.S.A., who has been with us for about a year, was transferred to the department of Physics, and soon afterwards Mr. C. R. Klinck, a graduate of the present year, took Mr. Thom's place in this department and remained with us during the summer.

Improvements in the Department.

In the past we have had considerable trouble with animals straying on the campus from the public roads and finding their way to the experimental field, where occasionally damage was done by these intruders. During the year a first class wire fence has been erected between the experimental field and the campus, which will effectually prevent all further trouble.

A few years ago when the experimental barn was moved to its present location, the roof was considerably racked, and in consequence had to be patched in several places to prevent leakage. This year we found that the shingles were again giving away on some parts of the roof, and we have therefore procured metal roofing similar to that on the farm barn, and this will be put on as soon as the spring opens up.

A marked improvement has also been made in our method of storing samples of seeds. In the past we have used cotton bags for this purpose, but as injury was constantly being done by mice and other vermin, it was deemed advisable to procure a sufficient quantity of tin cans to take the place of the small cotton bags. The seeds are now being placed in these cans, and they will be labelled and placed in systematic order on suitable shelving in the granary. The use of the cans will not only preserve the seeds in much better condition, but will also facilitate the work of the department.

A few slight changes in the interior arrangement of the Experimental Building, and the placing of some additional furniture in the offices during the year, has greatly facilitated the inside work.

General Outline of the Work in Field Husbandry in 1906.

1. The conducting of experiments in field agriculture on upwards of 2,000 plots at the Ontario Agricultural College.

2. The breeding of plants by systematic selection and by cross fertilization in order to improve some of the best old varieties and to originate new ones of greater value.

3. The directing of co-operative experiments on about 3,700 farms throughout Ontario. The report of the results of the co-operative work will be found in the annual report of the Ontario Agricultural and Experimental Union.

4. The furnishing of seeds and instructions for illustration plots on the exhibition grounds at Simcoe, Ontario.

5. The delivering of lectures to the freshmen, sophomore and senior class students, as outlined in the College calendar; also to the students taking the dairy course, to those taking the short course in stock and seed judging, and to those taking the nature study course at the Macdonald Institute.

6. The delivering of popular lectures to various gatherings of farmers as follows: Fifty or sixty in the experimental grounds to the thousands of excursionists who visited the College in the month of June; one at the annual meeting of the Canadian Seed Growers' Association, Ottawa; one at the Spring Seed Fair in Fergus; one at the Fall Fair in Simoce; one at the Provincial Winter Fair, Guelph; two at the conference of Institute workers held at the College in November, and three at the annual meeting of the Experimental Union, held at the College.

7. The writing of agricultural reports and articles. This includes the report of the Experimental department at the College and of the co-operative experimental work throughout Ontario; also articles on agricultural subjects which were sent to the farm journals and newspapers occasionally throughout the year.

8. The carrying on of a very heavy correspondence with farmers, seedsmen, directors of experiment stations, etc., during the greater part of the year.

9. The judging of grains, roots, potatoes, etc., at agricultural exhibitions. Within the past year, the writer, or some other member of the staff of this Department, acted as judge at the following fairs: The Spring Seed Fairs at Guelph and Fergus; the Autumn Seed Fair, Guelph; the Fall Fairs at Guelph and Simcoe; the Consolidated School Fair, Guelph, and the Provincial Winter Fair, Guelph.

10. The fulfilling of duties required of the Secretary of the Ontario Agricultural and Experimental Union.

Experimental Work.

The work in the Experimental department consists in planning the various experiments; laying out, seeding, and looking after the field plots; harvesting, threshing, weighing and testing the grain; taking up, weighing counting, testing and storing the potatoes and roots; cutting, weighing and harvesting the grass, corn and fodder crops, etc., and also in picking by hand the samples of grain grown on the plots, some to be sown on the plots the following year and some to be distributed for co-operative experimental work throughout Ontario. A great deal of thought and care is required in planning, supervising and examining these plots, and in studying, comparing and summarizing the results for presentation in reports, bulletins, newspaper articles and lectures.

Experimental Grounds.

About fifty acres of land, divided into upwards of 2,000 plots, are used for experiments conducted with varieties of grain, root, tuber, grass, clover, fodder, silage and other crops; with artificial, green and farmyard manures; with methods of cultivation, selection of seed, dates of seeding, etc. All of these experiments are conducted with the greatest care, and for several years in succession in order to secure strictly accurate results. These experiments deal with the crops grown on over nine-tenths of the cultivated land in Ontario.

The grounds have a gentle slope towards the southwest, and the soil is an average clay loam. About one-quarter of the land is manured each year with twenty tons of farmyard manure per acre; thus most of the land receives an application of farmyard manure once every four years. No commercial fertilizers are used except in distinct fertilizer experiments, and these occupy only a small number of plots each year. Within the past nine years one green crop has been plowed under on each section of the field. The plots vary in size according to the requirements of the different experiments, and the yields per acre are determined from the actual yields of the plots in every instance.

Results of Experiments.

All of our field experiments are conducted for at least five years before conclusions are drawn, and many of them continue for a much longer period of time. For the results of some of the tests which were carried on for five or more years previous to 1906, the reader is referred to former reports. The results of some of the experiments which have as yet been conducted for only one or two years, are withheld until the tests can be carried through for at least another summer. As different seasons vary so much in temperature, rainfall, etc., the average results of experiments continued for several years are of much greater value than those secured from only one or two years' work. Owing to the great care exercised in the work and the number of years through which the experiments are continued, we are able to present the results with much confidence in their reliability and in their practical value. From year to year the reports of the experimental work are being more widely read and more carefully studied by the farmers of the Province, and this is leading to a greater interest in crop production and a deeper knowledge of plant life on the farms of our country.

Weather Conditions in 1906.

A knowledge of the weather conditions during the growing season will be helpful towards a better understanding of the results of the experiments conducted. The report of the Physics department at the College shows that during the six months from April to September there was a rainfall of 17.5 inches. The precipitation for each of these months and for the same six months in each of six years previous to 1906, is shown in the following table:

Precipitation for past 7 years.		Precipitation in 1906.	
Year.	Rainfall during six months, April-September.	Month.	Rainfall.
1900	12.6 inches.	April	1.50 inches.
1901	16.5 "	May	2.71 "
1902	19.4 "	June	4.06 "
1903	15.8 "	July	4.65 "
1904	19.9 "	Aug.	2.13 "
1905	18.7 "	Sept	2.49 "
1906	17.5 "		

While these figures indicate that the precipitation for the six growing months in 1906 was only slightly more than average, it is worthy of notice that the rainfall during the months of June and July was very heavy.

The spring of 1906 did not open up unusually early, and no work was done on the land until about the middle of April, but after this date the weather was fine and the work of seeding was quickly accomplished. The first seed was sown on the experimental grounds on April 18th, and by the end of the month the greater part of the seeding had been done.

Comparison of Different Classes of Grain Crops.

From the report of the Provincial Bureau of Industries we learn that nearly 9,000,000 acres of land were used for the growing of field crops in Ontario in 1906. Bearing this fact in mind, we can easily perceive that slight mistakes in the selection of the most suitable crops for growing in the various localities, while they may not prove disastrous to the individual farmer, may easily result in great loss to the Province as a whole. Probably not enough thought has been given to this phase of the question of crop production among our farmers. The selection of crops is necessarily governed to a large extent by the location of the farm, the quality of the soil, the particular kind of farming which is followed, etc. There are many things to be taken into consideration in the selection of those crops which are likely to give the best satisfaction. Every farmer knows that oats will, as a rule, yield more bushels of grain per acre than will barley, and that barley, in turn, will yield more bushels per acre than wheat; but the bushel is a bulk measure and not a weight measure, and the weight of grain produced per acre is of much greater importance than the bulk. As there are more than 4,000,000 acres of the cultivated land in Ontario devoted to the growing of oats, barley, spring wheat, spring rye and peas, it is both interesting and valuable to make a study of the comparative yields of these crops, taking weight into consideration instead of bulk.

For the purpose of making such a comparison as that above referred to, an experiment has been in progress at the College for the past five years, and the results are presented in the following table. For this experiment the seeding took place on April 24th in 1902, on May 5th in 1903, on May 4th in 1904, on April 24th in 1905, and on April 24th in 1906. In each of these years twelve varieties of farm crops were grown in duplicate, making in all twenty-four plots in the experiment each season.

Varieties.	Date of ripening.	Height of plants.	Per centage of rust.	Straw per acre	Grain per acre.
		inchs.		tons.	lbs.
Barley (Mandscheuri)	Aug. 3	41	6	1.9	2739
Emmer (Common)	" 17	39	4	2.2	2714
Oats (Joanette)	" 13	39	8	2.8	2581
Hulless Barley (Black)	" 3	32	10	2.1	2546
Early Oats (Alaska)	" 6	42	11	2.2	2444
Hulless Barley (White)	" 6	34	5	2.0	2027
Spring Wheat (Wild Goose)	" 24	18	10	2.4	1818
Spring Rye (Common)	" 13	52	4	2.2	1775
Field Peas (Early Britain)	" 21	45	..	1.8	1684
Flax (Common)	" 15	28	..	2.1	1054
Grass Peas (Common)	Sept. 6	51	..	2.2	814
Spring Vetches (Common)	" 2	38	..	1.8	713

The figures presented in the foregoing table show that the greatest number of pounds of grain per acre has been produced by barley, and that the Emmer stands second in yield when weight is taken into consideration, and that there is but little difference between the yields of these two classes of grain; in fact the Emmer gave the highest yield for two out of five years through which the experiment has been continued. Emmer is, in reality, a species of spring wheat which is not yet very generally grown in Ontario, but gives promise of being a very useful crop when the grain is to be used for stock feeding purposes. The chaff of the Emmer is not removed in the process of threshing, as it adheres closely to the seed. In this respect it differs from the ordinary spring wheats. It may be well to state, however, that there is a larger percentage of hull on most varieties of oats than on Emmer. Oats have, as a rule, about 30 per cent. of hull, while Emmer has about 22 per cent., and barley 14 or 15 per cent. In comparing the different varieties of barley in this table, it should be borne in mind that while the yields of Black Hulless and White Hulless are considerably less than that of Mandscheuri, the grain of the hulless varieties weighs about sixty pounds per bushel, while the Mandscheuri will weigh from forty-eight to fifty. This difference, of course, is owing to the presence of the hull on the Mandscheuri variety. A close study of the table on the part of the reader will reveal several other interesting facts regarding the relative value of the different classes of grain.

One Year's Influence from Seed Selection.

For many years we have been conducting careful experiments to determine the value of careful selection of first-class seed for sowing. The results of these experiments have been given to the public from time to time, and in last year's report a summary of the results of all this work was presented. The experiments were not continued during the year 1906, but owing to the very great importance of this line of work it is deemed advisable to repeat here a considerable portion of the summary presented last year.

Fresh seed has been taken each year from the general crop of grain grown either on the Farm or in the Experimental department, or from seed of the leading varieties of roots and rape as obtained from some of the best seedsmen. It will therefore be understood that the results will represent simply one year's influence from seed selection; but in order to ascertain with greater accuracy the influence from one year's selection, the experiments have been repeated from season to season in order to secure a good average of soil and climatic conditions. For the large seed, none but well-developed grains were selected; for the medium-sized sample, the grains selected were of a uniform character, plump, and of medium size; and for the small, none but sound, plump and apparently good seeds of small size were used. In the selection of large, plump grain, one-half pound of each class was carefully weighed and counted. A corresponding number was then taken of the medium sized and of the small plump grains. The different selections of grain were sown upon plots of similar size.

Four tests were made annually with the different selections of seed of both root and rape crops. Duplicate experiments were conducted in which the seeds of the different selections were planted separately, and a duplicate experiment was also conducted by dibbling three large, five medium and eight small seeds at each place where it was desirable for a root or rape plant to grow. The plants were afterwards thinned, leaving one in each place, thus having the plants of the different selections of each class at equal dis-

tances apart. The results of the duplicate of each method were then averaged, and afterwards those of the two methods were averaged together. It will therefore be seen that the results of all the selections with roots and rape represent four distinct tests made in each of the years in which the experiment was conducted.

From the figures here presented in tabulated form, it is most interesting to observe the marked influence of one year's selection of seed on each of the eleven different crops here enumerated. It will be seen that the large seeds of oats produced about eight bushels per acre more than the medium sized, and the medium about seven and a half bushels per acre more than the small sized seed; or an advance of over fifteen bushels per acre from the large as compared with the small seed. Averaging the results for each class of crop, it is found that the large seed surpassed the small seed by 19.1 per cent. for the grain crops, 40.3 per cent. for the rape, and 60.1 per cent. for the root crops.

Crops.		Number of years of tests	Yield of crop per acre.		
			Large seed	Medium sized seed	Small seed
			Bus.	Bus.	Bus.
Grains	Oats	7	62.0	54.1	46.6
	Barley	6	53.8	....	50.4
	Spring Wheat	8	21.7	....	18.0
	Winter Wheat	6	46.9	....	40.4
	Field Peas	6	28.1	....	23.0
			tons	tons	tons
Field Roots	Mangels	5	33.2	29.6	21.5
	Sugar Beets	5	22.9	21.9	14.3
	Swede Turnips	5	17.1	15.2	8.7
	Fall Turnips	4	25.4	21.7	16.2
	Field Carrots	5	24.5	22.2	16.2
Rape	Rape	5	17.4	15.0	12.4

In another experiment conducted in a similar way to the one just described, a comparison was made between plump and shrunken seeds of barley, spring wheat and winter wheat. In this case, none but either plump or shrunken seeds were selected, and the selections were made regardless of the size of the kernels. The same number of seeds of the different selections for each class of grain was taken, and the different lots were sown on plots of uniform size. The average of several years' results show that in weight of grain per measured bushel and yield of both straw and grain per acre, the large plump seed surpassed the shrunken seed in every instance for each of the grains here mentioned. In averaging all the results, it was found that the plump seed gave a yield of 20.2 per cent. more than the shrunken seed.

Unless care is exercised, a considerable amount of grain is frequently broken in the process of threshing. In order to ascertain the amount of injury done to the germination of the grain by means of its being broken at the time of threshing, experiments have been conducted for at least six years, by sowing both sound seed and broken seed of barley, winter wheat, and peas, and the results carefully recorded. The following gives the average yield of grain per acre of each selection of each class of crop: *Barley*:

sound seed. 53.8 bus., broken seed, 46 bus.: *Winter Wheat*: sound seed, 46.9 bus., broken seed, 9.3 bus.; and *Peas*: sound seed, 29.2 bus., broken seed, 10.2 bushels. As the barley nearly always breaks crosswise of the grain, the germ is usually left uninjured. In the case of winter wheat and peas, however, the grain usually breaks along the crease and in very many cases the germ is either totally or partially destroyed.

The Best Time to Sow Spring Grains.

In the past we have conducted experiments to determine the best time at which to sow oats, barley, spring wheat, and peas. The detailed results of this test may be found in previous reports. It may be stated here, however, that the results indicated clearly that the largest yields of spring wheat and barley were obtained by sowing as early as the land could be cultivated in the spring; that oats gave higher yields when sown a few days later, and that peas might, to advantage, be sown from one to two weeks later than the wheat and barley.

After several varieties of Emmer and Spelt had been given a thorough test on our experimental grounds for several years, and much valuable information had been gathered regarding these crops, it was thought wise that a test should be made by sowing these two classes of grain at different dates in the spring in order to obtain information similar to that previously gleaned with reference to the other spring grains. Accordingly, an experiment was commenced in the spring of 1903 by sowing both Emmer and Spelt on eight different dates; the first plot of each being sown as early as the land could be cultivated in the spring, and the others sown at intervals of one week. The average results of this test for the past four years are clearly set forth in the following table:

Dates of seeding	Lbs. per measured bushel		Tons of straw per acre		Lbs. of grain per acre	
	Spelt	Emmer	Spelt	Emmer	Spelt	Emmer
First	28.6	39.9	1.7	2.0	2395	2773
Second	27.2	39.1	1.6	2.1	2175	2827
Third	26.6	38.6	1.7	2.0	1956	2711
Fourth	25.1	37.8	1.7	2.2	1667	2787
Fifth	24.	37.1	1.6	2.3	1413	2701
Sixth	21.5	36.3	1.8	2.5	1020	2615
Seventh	20.3	35.6	1.6	2.6	753	2548
Eighth	21.4	33.9	1.7	2.0	544	2113

Probably the first observation the reader will make on looking over this table will be the larger yield of the Emmer in every case. This superiority of Emmer over Spelt is also clearly shown in the results of our variety test and need not be given any further attention here. It will next be noticed that the second seeding of Emmer produced a larger crop than any of the others, while the highest yield of Spelt was obtained from the first seeding in the average of the four years' results. It should be further stated here that the largest yields of Emmer were obtained from the fifth sowing in 1903, the sixth sowing in 1904, the seventh sowing in 1905, and the first sowing in 1906; while the highest yields of Spelt were obtained from the first seeding each year. The most important observation to be made in connection with this test is that there is but little difference between the yields

from the first seven seedings of Emmer, and that this crop yields well even when sown quite late in the season; while it is plainly evident that Spelt must be sown as early as possible in the spring in order to get the best results. This is a very important factor in connection with the growing of Emmer, since, in a season when seeding of the ordinary spring grains may have been delayed through inclemency of the weather or the growth retarded after seeding owing to low temperature or other unsuitable conditions, it would likely be found much more profitable to sow Emmer than any of the other classes of spring grain, providing the crop was to be used for stock feeding purposes.

Quantity of Seed Per Acre.

For the results of experiments conducted in this Department in sowing different quantities of seed per acre of the various classes of spring grain and of winter wheat, the reader is referred to reports of past years.

In 1905, and again in 1906, each of four varieties of flax were sown at the rate of one-quarter, one-half and three-quarters of a bushel, and also at the rate of two, three and four bushels per acre, making in all twenty-four plots in the experiment each year. Averaging the results of the four varieties sown with each of the quantities of seed per acre here indicated, we find that the yields of flax per acre, after the seed used was subtracted from the crop, produced as follows:

Amount of seed sown per acre	Average yield per acre (2 years)	
	Tons of straw	Bushels of seed
1 peck	1.4	15.9
2 pecks	1.9	18.8
3 pecks	2.2	19.0
2 bushels	2.7	19.2
3 bushels	2.7	16.9
4 bushels	2.7	13.1

It will therefore be seen that the greatest yield of flax seed, less the amount of seed used, was obtained by sowing two bushels of seed per acre.

It is generally understood that when seed production is the only object in view, a much thinner seeding is desirable than when the crop is intended for the production of fibre: therefore, when this experiment was commenced it was expected that the first three seedings enumerated in the above table would indicate the best quantity of seed to be sown per acre for the production of seed, and that the last three seedings would give similar information regarding the sowing of flax for fibre production. Up to the present time, however, the results of the experiment show that two bushels of seed per acre will give a larger yield of seed than any of the thinner sowings. When flax is sown quite thickly the stems grow slender and upright and do not branch, with the result that a much longer and better quality of fibre is produced than when thinner sowing is resorted to. In each of the past two years there has been a decided difference in the production of the different varieties of flax, as will be shown in a later part of this report.

Growing Mixed Grain for Feeding Purposes.

For many years the desirability of growing grains in mixtures for the production of grain for feeding to live-stock has been a live topic at Institute

meetings and other gatherings of farmers, some maintaining that larger yields were obtained when the grains were grown separately, according to the old method, and others holding that it was profitable to sow mixtures.

Experimental work along this line was commenced by our department some time ago, and for five years in succession an experiment was conducted in growing oats, barley, wheat, and peas separately; and in eleven different combinations, having two, three or four classes of grain in each mixture. The results showed that the grain which was sown in mixtures produced larger yields per acre than the same kinds of grain sown separately in most cases. Of the eleven distinct mixtures used, the combination of oats and barley gave the heaviest average yield of threshed grain per acre. This mixture also gave a larger yield than any of the grains grown separately, and a considerably larger yield than the average of the oats and barley grown separately.

When this experiment had been completed, a new test was commenced, in order to determine the best proportions of oats and barley to sow per acre in order to obtain the greatest yield. This experiment was continued for six years and many different proportions were used. The average results at the end of the six year period showed that the largest yield had been obtained from sowing a mixture of one bushel of oats and one bushel of barley per acre.

For five years in succession an experiment has been conducted to determine whether a mixture of oats and barley could be improved upon by adding a quantity of some other kind of seed. This test has been made in duplicate each year, and the standard mixture used contained one bushel of oats and one and one-half bushels of barley per acre. Five plots were used for each individual test. On the first plot, oats and barley only were sown, and on each of the others half a bushel of some other kind of seed was added to the oats and barley mixture. The following table gives the average results in yield per acre of the two tests for each of the five years:

Mixtures	Tons of straw	Lbs. of grain
Oats (34 lbs.) Barley (72 lbs.)	2.2	2,612
Oats (34 lbs.) Barley (72 lbs.) Flax (28 lbs.)	2.4	2,566
Oats (34 lbs.) Barley (72 lbs.) Emmer (22 lbs.)	2.2	2,545
Oats (34 lbs.) Barley (72 lbs.) Spring Wheat (30 lbs.)	2.2	2,512
Oats (34 lbs.) Barley (72 lbs.) Hulless Barley (30 lbs.)	2.2	2,457

The figures shown in this table indicate very clearly the difficulty of surpassing a mixture of oats and barley for grain production.

Varieties of Barley and Oats Most Suitable for Growing.—When barley and oats are grown in combination, it is, of course, necessary to use varieties which will mature at about the same time in order that they may be harvested to best advantage. For this purpose, a very early variety of oats should be used with the common six-rowed varieties of barley, and it will be necessary to use a very late variety of barley with the ordinary heavy yielding varieties of oats. For an early ripening crop, we have found that Daubeney oats and Mandscheuri barley make an excellent combination, but where it is desirable to use such oats as the Siberian or Banner, the later two-rowed barleys, such as Chevalier or Canadian Two-Rowed, should be used in the mixture. Our experience, and the experience of other experi-

menters in different parts of the Province, goes to show that the mixture of Daubeney oats and Mandscheuri barley gives a larger yield of grain than a combination of later maturing varieties.

Twelve Kinds of Grain Grown in Combination.—In the spring of 1902, an experiment was started in growing twelve kinds of grain in different combinations. One of the principal objects of this experiment was to ascertain the relative value of different kinds of grain in a mixture, in comparison with the same grains when grown separately. Another object was to learn which of the twelve kinds would give the greatest percentage of both straw and grain in the crop produced. The mixtures were made up in two different ways, first, by using the same amount of seed of each variety as is usually sown when the grains are grown separately, and second, by using equal quantities of seed of all the varieties. Each of the mixtures here described was sown at the rate of 112 pounds of seed per acre. Both parts of the experiment were conducted in duplicate each year and the results of the five years' tests are presented in the following table:

Varieties used in each mixture.	Percentage of grains in mixtures. Five years—twenty tests.		
	Uniform weights of seed sown.	Quantities of seed in same proportion as when grown separately.	Average of two classes of mixtures.
Six-rowed Barley (Mandscheuri)	18.0	16.9	17.4
Hulless Barley (Black)	13.1	14.9	14.0
Spring Rye (Common)	12.8	13.8	13.3
Early White Oats (Alaska)	12.9	9.3	11.1
Black Oats (Joanette)	11.7	8.3	10.0
Emmer (Common)	6.2	7.2	6.7
Hulless Barley (White)	6.0	7.1	6.6
Peas (Field)	4.5	8.1	6.3
Grass Peas	6.1	5.1	5.6
Spring Wheat (Wild Goose)	4.2	5.6	4.9
Vetches (Common)	2.8	2.3	2.6
Flax (Common)	1.8	1.4	1.6

The figures shown in the above table indicate very clearly the comparative value of the different classes of crops for growing in mixtures. It will be seen at once that there is a somewhat higher percentage of six-rowed barley in the product of both mixtures than of any of the other grains, and that both oats and barley stand near the top of the list. These results, therefore, go to confirm the results of other experiments, and show that it is difficult to make a mixture which will produce a heavier yield of grain per acre than one made by a combination of barley and oats. It will also be seen from this table that Emmer produced but a small percentage of the mixture in either case, showing, that while it is a heavy yielding grain when sown alone, it is not so well suited for growing in combination with other crops.

Plant Breeding.

Improvement by Selection.—The improvement of grain crops by plant breeding, has been conducted on an enlarged scale during the past summer. Over 31,000 single plants of the leading varieties of spring and winter

grains have been grown and studied individually. Besides these, 110 test-plots of the selected strains of grains have been grown and studied. Since the spring of 1903, systematic selection of seed from known individual parentage has been carried on. At this time some very choice grain of six varieties of oats, barley and spring wheat were selected from the crops grown in the Experimental department of 1902. Of each of these six varieties, one-sixteenth of an acre was sown with a grain drill in the ordinary way; one-sixteenth of an acre was sown with a grain drill by using every second tube of the drill; one-sixteenth of an acre was planted by hand, placing the seeds eight inches apart each way; and one-sixteenth of an acre was planted by hand, placing the seeds one foot apart each way. It will therefore be seen that one and one-half acres were devoted to this work in 1903. No less than 9,972 seeds of each variety, or a total of 59,832 seeds of the six varieties, were planted by hand. The four methods of planting were used in order that a comparison might be made as to the best method to use in plant selection. It was found that the grain which was sown with a grain drill, either from every tube or from every second tube, gave a very poor opportunity for plant selection. From grain sown with a drill, heads may be selected, but it is practically impossible to make a satisfactory selection of plants, owing, largely, to the uneven distribution of the seed. When plants are grown at unequal distances apart, they vary greatly, owing to the relative amounts of soil, moisture and air furnished the individual plants, by the uneven way in which the seeds were distributed in the soil. On a careful examination of the plants obtained from the drilled seed, it was found that some of them would be separated from all other plants by ten or twelve inches; while in other cases two or three plants would be growing so closely together that their roots and stems would become so much entangled that it was difficult to ascertain whether there was simply one plant or whether there were two or three or four plants, until a considerable amount of time and labor were expended in making the examination. It was therefore decided to make a few selections of heads, but not to make a selection of plants from the crop produced from the seed sown with the machine. The grains which were sown by hand, however, gave an excellent opportunity for the plants to grow under uniform conditions. As all the plants in each of the two methods of hand planting were at equal distances apart, it afforded a good opportunity for studying the stooling properties, the comparative strength of straw, the size and uniformity of the heads, etc., of the individual plants. When the crops of each variety on the hand-planted plots had reached the proper stage of maturity, careful examinations were made and the results recorded for reference. After this was done, a few of the very best plants were selected and harvested separately. All of the seed of the most promising plant of each variety was sown in 1904, and nearly all the grain produced in 1904 was sown in the spring of 1905. Careful notes of the yields and characteristics of the several plants and plots of grain were taken, and certain constant amounts of seed were chosen from the products of the most satisfactory plots, and planted on plots of uniform size for the tests of these strains in 1906. In 1903, beside the selections cited above, a number of other choice plants of each variety were selected, and harvested separately; and afterwards the best seed was selected and sown in single rows during the summer of 1904. From those strains which gave the best satisfaction in 1904, a sufficient amount of seed was selected and sown on uniform plots in the spring of 1905, and the yield and quality of the crop produced were carefully noted. In the spring of 1906, selections were again made from the best of these strains, and grown and studied as in 1905. The results ob-

tained furnished some very interesting and valuable information. The great value to be got from continuous and systematic selection is evident. In the selection of seed of winter wheat, considerable importance is attached to strength of straw and power to resist disease. Just as in the animal kingdom, if the parent has not a rugged constitution it cannot withstand the severity of the climate, so a weak parent plant cannot withstand the rigors of climate and force of storms, nor can it produce offspring strong in constitution. Hence, to get a winter wheat that will produce the largest amount of plumpest grain, we must select parent plants showing strength of constitution—strength of straw. Ontario wheat has suffered greatly from the attacks of red rust (*Puccina graminis*). Certain strains of wheat seemed to be attacked less than were their neighbors. This desirable quality to resist disease was given prominence in selecting certain strains of winter wheat, and although the work is comparatively new there are indications of the transmission of this desirable quality and of other desirable qualities in the generations of recorded strains. We hope to further increase the power of winter wheat to resist rust, by breeding up strains of wheat that are immune to its attacks.

General Results of Selection.—The crop of 1905 produced sufficient grain of many of the strains of winter wheat, spring wheat, and other spring grains to supply seed for a plot of each strain in the variety test, *i.e.*, the improved strains of wheat, barley, oats, etc., were tested alongside of other varieties of these grains. In many cases the selected strains of grain excelled the ordinary variety crop in yield and weight per measured bushel. However, in some cases, the selected strains proved themselves inferior to the ordinary variety from which they had been selected. The tests of these selected strains will be carried on for five years, as are the tests of new varieties of grain. Those strains that prove themselves superior to the ordinary variety will be retained permanently, while the inferior strains will be discarded. The improvements of the varieties of grains by selecting their superior strains, seem to offer great opportunities. The results of the work of this Department are very encouraging.

Improvement by Hybridization and Selection.—The work of improving cereal crops by artificial cross fertilization followed by selection promises to become one of the great avenues for the betterment of such crops. By proceeding, according to the laws of nature, the plant breeder is able to combine two varieties of grain, each of which contains desirable and undesirable qualities. This must be followed by careful and wise selection of new types that arise in successive generations so as to obtain a combination of the good qualities of the parent varieties, while eliminating the undesirable qualities. A close study of the investigations of de Vries, Bateson, Biffen, Hays, and others, along with the theory of heredity enunciated by Mendel, is throwing considerable light on these difficult problems. A very close study of the development of hybrids grown at this station is being made, and valuable data is being collected. During the summer of 1906, over 15,000 hybrids of winter and spring grains were grown. In 1903, a cross was made between Dawson's Golden Chaff and Turkey Red varieties of winter wheat with the purpose of combining the hardness or flintiness of grain of the Turkey Red variety with the many good qualities of the Dawson's Golden Chaff wheat. In the summer of 1905, the product of this cross showed many variations. Four desirable types of plants were chosen from among these variations, and a number of seeds of plants conforming to these types were sown in 1906. When the crop of 1906 matured, it was found that two of the desirable forms of this cross came true to type. Several plots of the new breed

were consequently planted this fall, and will be watched with great interest through the season of 1907. In spring grains, a promising hybrid was obtained by crossing Emmer on Spelt. The troublesome beards of the Emmer have been removed, and the head lengthened considerably. The new type has come true through two generations. Still another hybrid has been obtained by crossing Red Fife on Herison Bearded spring wheat. A valuable cross between Joanette and Siberian oats has been made. The hybrid combines the thinness of hull of the Joanette oats with the strength of straw of the Siberian oats. These new breeds of grain must be tested for some years to make sure of their constancy in transmitting their characteristics. We hope, as we gain more light on this problem, by close observation of the growing plants, and by studying the works of other plant breeders, to reduce the time necessary for producing a new breed to a minimum. The work of the past season has been full of promise, and, although problems have arisen that we little anticipated, certain definite indications of progress are plainly visible. We aim at producing varieties of cereals that will be adapted to the different soils and climates of our Province, and that will give the heaviest yields where grown.

Treatment of Grain for Smut.

The farmers of Ontario are sustaining much loss from year to year through the injury done to the barley, wheat, and oat crops by smut. As this loss can be prevented to a large extent by the proper application of certain treatments to the grain before sowing, it would be well for the reader to study carefully the results of our experiments along this line.

Two varieties of winter wheat and two varieties of oats have each been treated in seven different ways, so that the results of the different treatments might be compared with one another, and with the results of sowing seed which was left untreated. The various treatments were as follows:

(1) Immersion in Diluted Formalin. The solution of formalin used for the immersion process was made by pouring one-half pint of the formalin into 21 gallons of water, and the seed oats were immersed in the solution for twenty minutes.

(2) Sprinkling with Diluted Formalin. One-half pint of formalin was poured into 5 gallons of water. The oats were then sprinkled with this solution and carefully stirred until the grain was thoroughly moistened.

(3) Immersion in Hot Water. For this treatment, the grain was placed in a bag, which was then immersed in water at about 115 degrees F. Soon afterwards it was placed in water which was kept at a temperature of between 130 degrees and 135 degrees F. The grain was occasionally stirred, and was allowed to remain in the water for a period of fifteen minutes. It was then spread out on a clean floor to dry, where it was stirred occasionally.

(4) Immersion in Bluestone Solution for Twelve Hours. In this treatment, the bluestone solution was made by dissolving one pound of bluestone in 25 gallons of water, and the oats were immersed in this solution for a period of twelve hours.

(5) Immersion in Bluestone Solution for Five Minutes. For this treatment, a strong solution was made by dissolving one pound of Copper Sulphate (Bluestone) in one gallon of water, and then immersing the oats in the solution for a period of five minutes.

(6) Immersion in Potassium Sulphide Solution. The potassium sulphide treatment consisted in soaking the seed for two hours in a solution made by dissolving eight pounds of potassium sulphide in 50 gallons of water.

(7) Sprinkling with Bluestone Solution. This solution was made by dissolving one pound of bluestone in 10 gallons of water, which was used for sprinkling over the oats until they were thoroughly moistened after being carefully stirred.

(8) Untreated. One sample of oats of each variety was left untreated in order that the influence of the various treatments might be observed.

It will be seen that eight lots of each variety of winter wheat and also of oats were used in the experiment each year. A few hours after the treatments had been completed, the grains were carfully sown on separate plots of uniform size. When the winter wheat was about ready to cut, the plots were carefully examined and the smutted heads picked out and shelled. The rest of the crop was then cut and threshed and again carefully examined for smut balls. After the oats began to head out, they were examined frequently, and all smutted heads were removed and carefully counted. The following table gives the results in the percentage of smutted grains of winter wheat and of smutted heads of oats:

Treatment.	Winter Wheat. Per cent. of Smut in Crop, Average of 3 years.	Oats. Per cent. of Smut in Crop, Average of 5 years.
Immersion in Diluted Formalin	.0	.0
Sprinkling with Diluted Formalin	.0	.0
Immersion in Hot Water	.0	.0
Immersion in Bluestone Solution for twelve hours	.0	.1
Immersion in Bluestone Solution for five minutes		.8
Immersion in Potassium Sulphide Solution		1.2
Sprinkling with Bluestone Solution	.1	1.3
Untreated	4.5	5.7

It will be seen from the foregoing table that the experiment has now been continued for three years with winter wheat and for five years with oats. The column representing the results of the winter wheat shows that most of the treatments were quite effectual in preventing the development of smut, but it must be borne in mind that this refers only to the hard or stinking smut and not to the loose smut of wheat, these treatments not being useful for the prevention of the latter. Several treatments have also been quite successful in preventing the development of smut in oats, but some of them have proven to be more or less injurious to the seed to which they were applied, and are therefore not desirable. In the average results, it will be seen that there was quite a large percentage of smutted grain in both the oats and wheat which were not treated. Such a percentage of smut in all the wheat and oat fields of the Province would mean a great loss in the total production. The grain which was immersed for twenty minutes in a solution made by adding one pint of formalin to 42 gallons of water produced a crop which was practically free from smut in the case of both winter wheat and oats in each of the years when the experiment was conducted. The treatment here mentioned was easily applied, comparatively cheap, effectual in killing the smut spores, and was found to be less injurious to the seed grain than any of the other treatments.

In each of the last three years, an experiment has been conducted with two varieties of oats; the seed of each was one, two, three, four, and five

years old. The object of the experiment was to ascertain whether smut spores would lose their vitality sooner than the oats. Up to the present time we have not found this to be the case, since the seed five years of age has produced quite as many smutted heads as the seed grown last year.

For two years in succession we have endeavoured to prevent the development of smut in barley by immersing the seed in a solution made by mixing one pint of formalin with 42 gallons of water. This experiment was conducted with two varieties of barley each year, but the treatment has not proven effectual in any case. It would seem, therefore, that while this solution completely destroys oat smut, it is of no value for the prevention of smut in barley.

Varieties of Oats.

The acreage devoted to the growing of oats in the Province of Ontario is increasing from year to year. In the year 1906, there were in Ontario about 48,000 acres more of oats than in 1905. This increase, and the fact that the oat crop is already very much more important than any other class of grain grown in this Province, will warrant all possible efforts being made to increase the yield per acre by whatever means this may be accomplished. Better preparation of the soil for the seed, greater care in the handling of the crop, and the selection of the very finest varieties for growing in all parts of the country, will all help to swell the yield per acre, and hence the total production. An increase of even one or two bushels per acre would mean an immense increase in money value to the Province as a whole. Careful inquiry has revealed the fact that the Siberian and Banner varieties are decidedly the most extensively grown oats in Ontario at the present time. The Siberian was imported from Russia by this department many years ago, and after having been thoroughly tested and its high value ascertained on our experimental grounds, it was widely distributed through the Province, and unquestionably the introduction of this variety has been largely instrumental in increasing the average yield per acre throughout Ontario.

Within the past eighteen years, 287 varieties of oats have been tested in the Experimental department at the College. Many of these have proven comparatively worthless for growing in Ontario, but a large number of them are very good varieties, and some are decidedly superior in yield and in quality to many of the kinds commonly grown throughout the Province. The results of these variety tests have been given to the public from time to time, and it is not thought wise to place them in tabulated form in this report. It may be stated, however, that among 53 varieties which have been grown for the last five years, 15 have given average yields of more than 100 bushels per acre in our plot tests, the Banner standing first, with a yield of 109 bushels per acre. Among the early varieties the Daubeney is possibly the most promising in yield and quality. Other good early varieties are Prosperity, Alaska, and Early White Pearl. The Early Ripe is one of the very earliest to mature, and although rather a poor yielder, seems to be less subject to injury from smut than any of the other varieties.

Varieties of Barley.

Our varieties of cultivated barley are naturally divided into two great classes, six-rowed and two-rowed. Each of these is divided into several subclasses, and in each sub-class we find a number of varieties.

Six-Rowed Barley.—Most of the varieties of barley grown on the farms of Ontario belong to the six-rowed class, and these will be spoken of most

fully in this report. During the last twenty years quite a number of sorts have been tested on our experimental grounds. From time to time inferior kinds have been discarded, and each year new varieties have been added to the list. Four of the standard varieties have now been tested for seventeen years in succession, and the average yield per acre of these four for the seventeen years is, as follows: Mandscheuri, 70.6 bushels; Oderbrucker, 64.2 bushels; Common Six-rowed, 61.9 bushels; and Mensury, 60.2 bushels. These figures show that the Mandscheuri variety is quite decidedly superior to the others in yield and quality, and it is fortunate that this is at the present time probably the most widely grown barley in Ontario. In order to make a comparison of a larger number of varieties for a shorter period of time, the following table is introduced:

Varieties.	Average results for 5 years.		
	Pounds per Bushel.	Tons of Straw per Acre.	Bushels of Grain per Acre.
California Brewing	46.1	2.3	79.5
Mandscheuri	50.5	2.6	77.8
Oderbrucker	51.3	2.3	71.6
Triumph	51.6	2.2	71.2
Common six-rowed	52.3	2.2	70.1
Scotch Improved	52.6	2.3	68.6
Mensury	52.2	2.3	63.9
Imperial six-rowed	52.1	2.1	63.0
Success	48.9	1.8	53.1
Dakota Silver Beardless	47.9	2.0	50.4
Champion Beardless	48.5	1.7	49.8
Humboldt	48.8	1.7	49.2
Ohio Beardless	47.6	2.0	48.2

From this table it will be seen that the California Brewing has given a somewhat larger yield than the Mandscheuri in the average of the last five years; but the reader will observe that while this is the case, the quality of the first mentioned variety is not nearly so good as that of several of the more commonly grown kinds, the weight per measured bushel being only slightly more than 46 pounds, while other varieties weigh from 50 to 52.6 pounds per bushel. The California Brewing is rather weak in the straw and has a very strong, harsh beard. These qualities, combined with the light weight of the grain, make it rather undesirable, even though the yield is large.

The first eight varieties mentioned in the above table are bearded and the other five beardless. It is interesting to note that the beardless varieties (while they are not nearly so disagreeable to harvest and thresh) give much lower yields of grain than the others; and the grain is decidedly light in weight, as compared with all the bearded kinds excepting California Brewing.

Two-Rowed Barley.—Sixteen varieties of two-rowed barley have been tested for the past five years in succession. Five of the best of these have given the following average yields: Iowa No. 5590, 72.3 bushels; Iowa No. 5591, 71.2 bushels; Jarman's Selected, 71.2 bushels; Two-rowed Canadian, 70 bushels; Selected Canadian Thorpe, 68.5 bushels. There are two very distinct classes of two-rowed barley. All of the varieties belonging to the

first class have very strong straw and rather short upright heads, while those belonging to the second class produce very weak straw and long, slender nodding heads. Varieties of both of these classes produce plumper and more uniform grain than that furnished by the six-rowed varieties. The grain furnished by the weak strawed, slender headed two-rowed kinds, is considered much better for malting purposes, owing to its high starch content; but in Ontario the varieties belonging to the strong strawed, upright class, produce considerably larger yields, and will therefore probably be more widely grown than the others. The Two-rowed Canadian is one of the best known varieties of the last mentioned class, and all of the two-rowed varieties named in this paragraph belong to the same class.

Hulless Barley.—Eight varieties of hulless barley have been given a careful test for the past five years. Among these the Guy Mayle stands first in average yield, with 53.2 bushels per acre; the Hungarian second, with 50.3 bushels; and the Black Hulless third, with 49.1 bushels. It must, of course, be borne in mind that the above yields are reckoned at the rate of 60 pounds per bushel, since that is about the usual weight of the grain of this class of barley.

Winter Barley.—A few strains of winter barley have been tested at the College for quite a number of years, and it has been found that while these do not always survive the winter, still in seasons when they are not winter killed they produce large yields of about the same quality of grain as that furnished by the ordinary six-rowed varieties. In nine out of the past fourteen years these varieties have come through the winter fairly well and have generally given good crops. In the other five years, the crop was almost completely winter killed.

Varieties of Wheat.

There are in all, seven distinct species of wheat, and to one or another of these species all our cultivated varieties belong. The species may be enumerated as follows:

(1) Common, soft, or flour wheat (Triticum vulgare).

(2) Turgid or Toulard wheat (Triticum turgidum).

(3) Hard, or flinty wheat (Triticum durum).

(4) Polish wheat (Triticum polonicum).

(5) Spelt (Triticum spelta).

(6) Emmer (Triticum dicoccum).

(7) One-grained wheat or Einkorn (Triticum monococcum).

All of the winter wheats and the majority of the spring varieties belong to the first class and are used chiefly for the manufacture of flour.

Winter Wheat for Flour Production.—About two hundred and fifty varieties of winter wheat have been tested at the College within the last seventeen years. In all cases the varieties are given a thorough test for five years, at the end of which time the inferior kinds are discarded and only the more promising ones retained for further experiments. During the past season sixty-one varieties were grown; twenty-nine of these have been under test for the past five years, and fifteen of the twenty-nine for the past ten years.

The following table gives the average weight per measured bushel and the average yield of straw and grain of each variety for ten years.

Varieties.	Color of Grain	Weight per Bush.	Straw per Acre.	Grain per Acre.
		lbs.	tons.	bus.
Dawson's Golden Chaff	White	59.7	3.3	54.0
Imperial Amber	Red	60.5	3.8	52.3
Early Genesee Giant	White	59.7	3.5	50.7
Russian Amber	Red	60.7	3.6	50.4
Egyptian Amber	Red	61.2	3.7	49.6
Early Red Clawson	Red	58.9	3.2	49.5
Tasmania Red	Red	61.5	3.3	47.7
Rudy	Red	60.8	3.0	47.1
Tuscan Island	Red	61.0	3.3	47.0
Geneva	Red	62.2	3.3	45.9
Bulgarian	White	60.5	2.9	45.1
Turkey Red	Red	61.1	2.9	44.8
Kentucky Giant	Red	61.0	3.0	44.6
McPherson	Red	62.0	2.9	44.2
Treadwell	White	60.4	2.9	44.2

Among the sixty-one varieties grown this season, the Abundance stood first in yield with 50.4 bushels per acre, and the Prize Taker second with 50.2 bushels. These are both white wheats, very closely resembling the Dawson's Golden Chaff in all respects. The Abundance also gave the highest yield among all the varieties grown in 1905 and is a promising variety, although not of the very best milling quality. It is interesting to note that this year two of the comparatively hard red wheats—Russian Amber and Imperial Amber—have come up to second and third places in yield of grain with 49.8 and 49.4 bushels per acre respectively. All four varieties mentioned above were over the standard in weight, the Imperial Amber being the heaviest and weighing almost 63 lbs. per bushel. The five varieties giving the heaviest weight per measured bushel in 1906 were Northwester, Geneva, McPherson, Economy, and Auburn; these, however, were all rather low in yield with the exception of Auburn, which was fifth in weight per measured bushel and sixth in yield of grain per acre among the sixty-one varieties grown. Generally speaking, the white wheats yield more grain per acre, possess stronger straw, weigh a little less per measured bushel, and are slightly softer in the grain than the red varieties.

Spring Wheat for Flour Production.—The area devoted to the growing of spring wheat for the manufacture of flour is decreasing from year to year in this Province. This is owing to the fact that winter wheat can be grown with greater profit in most localities; and spring wheat of better quality than can be grown in Ontario is being imported from the Canadian West in larger quantities each succeeding year. Thirty-five varieties of spring wheat were grown in the Experimental department in 1906. Twenty of these have been grown for five years in succession, and eleven of the twenty belong to the class of wheats used for the production of flour. Among these, the well-known Red Fife variety stands first in average yield with 33.5 bushel per acre; the Pringle's Champion second with 33.1 bushels, and the Saxonka third with 33 bushels per acre. Thus it would seem that we have no new variety of spring wheat to offer the public which will give better satisfaction than the Red Fife, which has been grown for so many years both in Ontario and in the Canadian West.

Spring Wheat for the Production of Macaroni.—The varieties of wheat used for the manufacture of macaroni belong to the third species mentioned in the foregoing list. Seven varieties of this class were grown in the Experimental Department at the College in 1906, and six out of the seven have been grown for the past fourteen years. On averaging the yields for the fourteen years, we find that the Wild Goose variety stands first with 39.7 bushels; Medeah second with 35.4 bushels; and Bart Tremenia third with 34.8 bushels. On looking over the results of the experiments for each of the years included in this test, we find that the Wild Goose gave the highest yield ten times out of the fourteen. Thus we see that it is an outstanding variety among the macaroni wheats. It should be said, however, that while this variety gives a much larger yield of grain than any of the flour producing wheats, it seldom brings as high a price on the market, and in fact is most commonly used for feeding purposes or for shipment to countries where macaroni is manufactured.

Spring Wheat for Feeding Purposes.—In this class, we place the varieties of Emmer and Spelt. These are generally used for the making of meal for stock feeding purposes, owing to the fact that the chaff adheres closely to the grain and is not removed in the process of threshing. The following table includes three varieties of Emmer and four of Spelt which have been tested for the past five years, and the average results are given in all cases:

Classes of Crop	Varieties	Percentage of			Pounds per bushel 4 years	Yield per acre	
		Rust	Crop lodg'd	Hull with grain		Tons of straw	Pounds of grain
Emmer	Common	3	'29	21	39.0	2.4	3264
	Iowa	2	27	21	39.6	2.2	3107
	Russian	2	29	22	39.9	2.2	3057
Spelt	Red	14	4	31	27.5	2.0	2464
	Alstroum	20	4	31	27.6	2.0	2432
	White	15	3	32	27.8	1.7	2139
	Dasyanthum	17	16	30	27.4	1.9	1904

The decided superiority of Emmer as a grain producer is very clearly shown by the figures given in the above table. For the five years through which this test has been carried, Common Emmer has given an average of 800 pounds of grain per acre more than the highest yielding variety of Spelt. Not only is the superior yielding power of the Emmer here shown, but the better quality of the grain is also evident, since there is a much lower percentage of hull on the Emmer than on the Spelt. A study of the table will reveal some other interesting facts regarding the comparative value of these two classes of grain and also the relative merits of the different varieties of each.

Polish Wheat or Corn Wheat.—This grain has been sold under both names, but most commonly under the name of Corn Wheat in Ontario. It has been under test on our plots for about twelve years, and was grown again in 1906 in comparison with the other varieties of both flour and macaroni wheats, and this year, as before, has shown itself to be a poor producer of grain.

Varieties of Rye.

The acreage devoted to the growing of rye in Ontario is greatly decreasing, and yet there were nearly 80,000 acres of this crop grown in 1906. It is therefore worthy of brief mention in this report.

Spring Rye.—Four varieties of spring rye have been under test for the past five years and have given the following average yields of grain per acre: Dakota Mammoth, 32.8; Common, 31.7; Prolific, 31.3; and Saatroggen, 20.1. The Saatroggen was introduced from Germany five years ago, and for the first two years that it was grown produced very little grain, but since it has become acclimatized it is giving very much better results and surpassed the Dakota Mammoth in yield of grain per acre both in 1905 and 1906. It would therefore seem to be a very promising variety, and may prove to be of much value to farmers interested in the growth of this crop.

Winter Rye.—Common Winter Rye and Mammoth Winter Rye have been grown for seven years in succession; the Common giving an average yield of 57.9 bushels and the Mammoth 59.3 bushels of grain per acre. Among five varieties grown for the past three years, the Mammoth White stood first with an average yield of 66.6 and the Washington second with 61.7 bushels per acre.

Winter Barley.—Winter Barley has been grown at the College for several years, and when it is not winter killed gives very good yields. This season it made a very poor showing in the spring, but recovered from the effects of the unfavorable winter and yielded 58.5 bushels per acre.

Hairy or Winter Vetches.—Hairy or Winter Vetches produced an average yield of 10.2 tons of green crop per acre in the experiments for four years and 6.7 bushels of seed per acre in the tests for six years. Home grown seed has given considerably better results than imported seed.

Varieties of Buckwheat.

Of the five varieties of buckwheat which were grown on our grounds in 1906, three have been under test for nine years in succession, the Silver Hull giving an average yield of 20.4 bushels; the Japanese, 19.9 bushels; and the Common Grey, 17.2 bushels per acre. The variety known as Rye Buckwheat, which was introduced three years ago, has given higher yields of grain than any of the other kinds grown in each of the past three years.

Varieties of Field Beans.

There were in all, sixteen varieties of field beans under test in the department during the past season, and most of these gave very fair yields of grain. Thirteen of the number have now been grown for ten successive years, the Pearce's Improved Tree producing an average annual yield of 25 bushels of grain per acre; the Burlingame Medium, 21.6 bushels; the Day's Improved Leafless, 21.3 bushels; the White Wonder, 21.3 bushels; and the Medium or Navy, 21.2 bushels. Among these five varieties there is a difference of about seven days in time of maturing, the Burlingame Medium being the earliest and the Pearce's Improved Tree the latest of the five. Of the new varieties which have been tested for only a few years, the New Prize Winner and Yellow Eyed Marrowfat give promise of being very profitable kinds to grow.

Varieties of Soy, Soja or Japanese Beans.

Although a large number of varieties of this class of beans have been tested for some years on our trial grounds, most of them prove to be quite unsuited for growing in Ontario as they require a long season in which to mature. A few varieties, however, ripen quite early and produce good

yields of grain, which is very high in feeding value. Among the varieties which mature their seed here, the Early Yellow is worthy of special mention. In 1906, this variety gave a yield of 30.4 bushels of ripe seed per acre, this being the greatest amount of grain produced by it in any one year since 1893, when it was first tested. Its average yield for the eleven years is 16 bushels per acre. Other varieties which have made good growth in our tests are the Medium Green and Ito San. The plants of the Medium Green are considerably taller and require a longer season to reach maturity than those of the other two varieties mentioned, and it is probable that this kind will be used for fodder and ensilage purposes rather than for the production of seed.

Cow Peas.

While the varieties of cow peas which have been under test for several years have generally made but a poor growth, in 1906 all of the ten kinds grown germinated well and grew vigorously throughout the season. The cow pea is, of course, a southern crop, requiring, as a rule, a much longer season than we have in Ontario. In most years they have been in about the blossoming stage at the time that the first autumn frosts came, but in 1906 most varieties produced pods and a few gave small yields of ripened seeds. Among these might be mentioned Salzer's Prolific, Sixty Day, and Ivon. While it may be possible to secure earlier strains of a few of these varieties by a selection of seeds from the earliest maturing plants, and making a continuous selection in this way for a few years; still it is questionable whether cow peas will ever be used to any extent as a cultivated crop in Ontario.

Varieties of Flax for Seed.

For the past two years, a test has been made of four distinct varieties of flax to determine which would give the largest yield of seed. They have given the following average yields: Manitoba, 21.5 bushels; Common, 20.9 bushels; Russian, 18 bushels; and Holland, 15.2 bushels of seed per acre. It should be stated, however, that six plots of each variety were sown, with varying amounts of seed running from one-quarter bushel to four bushels per acre, and in each case the yield given above is the average of the six plots. On the average, the plots sown at the rate of two bushels of seed per acre were the most productive, and where this quantity of seed was sown the varieties yielded as follows: Common, 24.9 bushels; Russian, 24.1 bushels; Manitoba, 23.9 bushels; and Holland, 19.4 bushels per acre.

Potatoes.

A great variety of valuable experiments have been conducted with potatoes during the past fifteen years, and in 1906 there were upwards of two hundred and thirty plots, making in all about three acres of land devoted to the potato tests on our trial grounds this year. As it is probable that an exhaustive bulletin on "Potato Culture" will be published by the Department during the coming year, the results of the experiments above referred to are withheld at the present time.

Varieties of Swede Turnips.

Twenty-eight kinds in all were grown in 1906, and among these the Rennie's Queen stood first with a yield of 19.4 tons of roots per acre. Twenty-four of these varieties have been tested for the past three years, and among these Rennie's Queen again stands first with an average yield of 24.2 tons

per acre, and Sutton's Queen second with 24.1 tons. Five varieties which have been given a five years' test gave the following average yields of roots: Hall's Westbury, 21.9; Sutton's Magnum Bonum, 19.2; Hartley's Bronze Top, 19.2; Buckbee's Giant, 19.2; and Kangaroo, 18.6 tons of roots per acre. The Rennie's Queen, which has given such splendid results for the past three years, is a very nice, smooth turnip, well suited for the shipping trade.

Thinning Swede Turnips at Different Stages of Growth.

In 1905, and again in 1906, a duplicate experiment was conducted to determine, if possible, whether it is more desirable to thin turnips when they are quite small or to leave them until the plants have attained a somewhat greater growth. In this test, the plants on plot No. 1 were thinned when about one-half inch high; those on plot No. 2 when about two inches high; those on plot No. 3 when five inches high; and those on plot No. 4 when eight inches high. The average results for the four tests in the two years show that the largest crops of roots was obtained when the plants were thinned at the time when they had attained a height of about two inches. When the plants were left until they had grown to a height of eight inches before thinning, the yield was about one-third less.

Mangels.

The average acreage of mangels in Ontario for the past twenty-five years was 38,500. To show the great increase in the production of this crop, it is only necessary to state that in 1906 there were 69,352 acres in the Province. This increase shows the great value that stock feeders place on this class of roots at the present time. We have tested twenty-six distinct varieties during the past season and twenty-two of these have been under experiment for five years in succession. As there is a great difference in the amount of crop produced by the individual varieties, it is deemed advisable to print the following table in order that readers may compare for themselves:

Variety.	Tons of Tops per acre.	Tons of Roots per acre.	
	Average of 5 years.	1906.	Average of 5 years.
Yellow Leviathan	5.6	35.6	34.1
Sutton's Mammoth Long Red	5.5	38.2	33.8
Evan's Improved Mammoth Sawlog	6.3	38.3	33.5
Griewener	2.8	40.3	33.2
Steele-Brigg's Giant Yellow Intermediate	5.4	36.8	33.1
Mammoth Golden Giant	5.6	37.3	32.6
Carter's Windsor Prize Taker Yellow Globe	2.2	36.2	32.3
Rennie's Perfection Mammoth Long Red	5.9	41.5	32.2
Ideal	2.5	37.0	31.7
Carter's Mammoth Prize Long Red	5.8	37.1	31.5
Simmer's Improved Mammoth Long Red	5.9	37.0	31.3
Cornish Giant Yellow Globe	2.1	34.1	30.9
Long White	5.9	35.6	30.9
Steele-Brigg's Giant Yellow Globe	2.4	30.0	30.5
Yellow Leutewitzer	6.2	38.1	30.2
Garton's Improved Yellow Globe	2.3	35.2	29.8
Steele's Long Red Selected	5.5	33.1	29.6
Norbitan Giant	5.3	33.8	28.7
Garton's Improved Yellow Intermediate	2.3	28.8	27.9
Garton's Long Red	5.0	32.2	27.9
Red Globe	3.9	31.5	27.0
Mammoth Red Intermediate	3.2	31.8	26.8

On examining this table carefully, we find that while Rennie's Mammoth Long Red and Griewener gave the highest yields in 1906, both of these are somewhat surpassed in yield by three other varieties in the average of the five years' test: the Yellow Leviathan here standing first; Sutton's Mammoth Long Red, second; and Evans' Improved Mammoth Sawlog, third. The Yellow Leviathan is a very desirable mangel, being good in size, shape, and quality, as well as in yield.

Soaking Mangel Seed before Sowing.—The advisability of soaking mangel seed before it is sown in order to soften the husk and hasten germination, has been much discussed among farmers. It was therefore decided several years ago to make an effort to get some definite knowledge regarding this matter by making a careful test. A duplicate experiment has now been conducted for five years, by sowing seeds which have been soaked in water for thirty-six hours, twenty-four hours, and twelve hours, respectively, on uniform plots. In each individual test one plot was also sown with seed which had not been soaked. On averaging the results of the five years' experiments, we find that soaking the seed proved beneficial in all cases. The greatest increase in yield was given when the seed had been soaked for only twelve hours; the average yield in this case was 22.8 tons of roots per acre, while the unsoaked seed gave a yield of only 20.3 tons. The results in the different years are fairly uniform, and therefore show quite clearly that it is profitable to soak the seed before planting, providing it is not left in the water too long.

Sugar Beets.

Varieties.—For some years several varieties of sugar beets have been grown in different districts throughout the Province for stock feeding purposes. These vary considerably, not only in the yield of roots which they produce; but also in feeding value, owing to the fact that some contain a higher percentage of sugar than others. Since the beginning of the manufacture of sugar in Ontario a few years ago, a much wider interest has been taken in the culture of this class of roots. Quite a number of varieties have been under test for some time on our experimental plots, and nineteen of these have been grown for five years in succession. Among these, the five heaviest croppers have given the following average yields of roots per acre: Giant White Feeding, 32.4; Tankard Cream, 29.9; Royal Giant, 28.9; Giant Rose Feeding, 27.6; and Rennie's Giant Sugar, 26.7 tons. Eleven out of the nineteen have given higher average yields than that produced by the Kleinwanzlebener, which is the kind used almost exclusively for the manufacture of sugar in this Province. The average yield of roots of this variety during the past five years is 21.5 tons per acre. It should be remembered that the beets of the Kleinwanzlebener variety contain a considerably larger percentage of sugar than most of the other kinds. A number of the varieties included in our plot tests have been analysed in the Chemical laboratory at this Institution, and the results of these analyses will be found in Prof. Harcourt's report of the Chemical department in another part of this volume.

Soaking Sugar Beet Seed before Sowing.—An experiment, similar to that with mangel seed referred to on a previous page, has been conducted for the past four years with sugar beet seed. Here again we have found that soaking the seed before planting has been instrumental in increasing the yield of roots. In this case, however, the seed soaked for twenty-four hours has given slightly better results than that soaked for either twelve or thirty-

six hours. The unsoaked seed gave a yield of 13.3 tons of roots per acre, while the seed soaked for twenty-four hours gave a yield of 15.8 tons.

Thinning Beets at Different Distances in Drills.—For four years in succession an experiment has been conducted in thinning sugar beets to two, four, six, eight, and ten inches apart in the rows. This experiment was conducted in duplicate each year, and the Kleinwanzlebener, which is grown for sugar making purposes, was used throughout. The average results of the eight tests in the four years are presented in the following table:

Distance between plants.	Average weight per root.	Average yield of roots per acre.
	Pounds.	Tons.
2 inches	.45	19.15
4 inches	.72	16.86
6 inches	.91	16.98
8 inches	1.12	16.76
10 inches	1.36	16.33

A study of this table reveals the fact, that when the beets were thinned to a distance of only two inches apart the roots were quite small, but the yield per acre was larger than when the beets were thinned to greater distances. This is contrary to the common idea that beets should be thinned to a distance of ten or twelve inches in order to get a large growth of the individual roots if the largest possible yield is to be obtained. Of course, it must be borne in mind that while close thinning results in large tonnage of crop per acre, it involves a greater amount of work both in thinning and in harvesting the crop.

Thinning Beets at Different Stages of Growth.—The average results of a four years' test in thinning beets when they have attained a height of one-half inch, two inches, five inches, and eight inches on different plots, shows that the largest yield was obtained by thinning plants when they were two inches high, and the smallest yield by thinning when the plants had attained a height of eight inches.

Growing Beets on the Level and on Ridges.—Sugar beets have been grown on the flat and on ridges in the Experimental Department for the past five years, with the result that those grown on the level gave an average yield of 19 tons per acre, and those grown on ridges a yield of 18.1 tons per acre. This is an excess of nearly one ton per acre in favor of level cultivation.

Varieties of Carrots.

Experiments conducted with many varieties of carrots go to show that the long, deep-rooted varieties which were once so commonly grown, are no longer desirable. During recent years a number of varieties of medium length and greater thickness have been introduced, and the following tabulated figures will show how these intermediate varieties are at present surpassing the old White Belgian type in yield, besides being much easier to harvest:

Variety.	Average results for 5 years. Tons of tops per acre.	Tons of roots per acre.
Mammoth Intermediate Smooth White	7.0	31.9
Steele's Improved Short White	6.9	30.9
Iverson's Champion White Intermediate	6.3	30.8
Carter's Hundred Ton	6.3	30.8
Mastadon White Intermediate	6.3	30.6
Sutton's Matchless White	8.3	30.3
Simmer's Short White Vosges	6.6	28.8
American Beauty	6.3	27.4
Large White Belgian	6.5	27.2
Large White Vosges	6.0	26.9

In addition to the information given in the above table, it may be mentioned that among nineteen varieties grown on our experimental plots in 1906, the five varieties which stood at the top of the list in amount of crop produced, yielded as follows: Iverson's Champion White Intermediate, 31.8 tons; Mammoth Intermediate Smooth White, 31.2 tons; Simmer's Short White Vosges, 30.5 tons; Steele's Improved Short White, 29.7 tons; and Carter's Hundred Ton, 29.5 tons of roots per acre. It is interesting to notice that four out of these five varieties are included in the foregoing table.

Corn.

While corn is not grown quite so extensively in Ontario as it was a few years ago, still it is one of our most valuable fodder crops, excepting in the northern districts, and it is also grown to a considerable extent for the production of grain in the southern counties. For fodder purposes alone the Province had a crop of more than 180,000 acres in 1906. This would seem to be sufficient to warrant some careful experimental work being done at this Station to discover, if possible, the varieties most suitable for growing and the best methods of planting and cultivating. Already a great amount of careful work has been done, and reports of the experiments have been published from time to time. It should be stated, however, that it is probably more difficult to conduct satisfactory experiments with corn than with any other farm crop for the following reasons:

(1) It is not possible to grow distinct varieties side by side without their becoming mixed, because corn is naturally cross fertilized through the agency of the wind; hence it is necessary to get fresh seed of all varieties each year, and it cannot always be obtained from the same sources as in previous years.

(2) There is such a great difference in the length of season required for the maturing of different kinds, that variety tests must be, to a considerable extent, a matter of locality.

Notwithstanding these difficulties, however, the variety tests conducted at this Station should serve as a general guide to the farmers in most parts of Ontario, by indicating to them the kinds which are likely to be suitable for their respective localities.

One hundred and forty-five varieties were grown at this station in an experimental way for fodder purposes in 1906. Many of these produced matured grain before the first frosts came in the autumn, while the larger number were in a more or less immature condition. Those which gave the largest tonnage of green fodder per acre, including stem, leaf, and ear, yielded as follows: Austin's Colossal Yellow Dent, 26.1 tons; Pennsylvania Early Dent, 25.4 tons; New Century Wonder, 24.5 tons; Chase's White

Dent, 24.1 tons; Mogul, 23.6 tons; Kansas Sunflower, 23.5 tons; and Henderson's Eureka, 23.5 tons. Among these, the Chase's White Dent gave the largest yield of ears, and the Henderson's Eureka stood second in this respect. In both cases, however, the ears were in a somewhat immature condition, having reached only the milk stage, so that while the total yield of green crop was large, the ears were so green that the quality of the ensilage made from this variety would not be first-class. These two kinds might, however, be recommended for growing for fodder purposes in the southern part of the Province, where they would likely reach a sufficiently advanced stage of maturity to make ensilage of first class quality. Among the one hundred and forty-five varieties grown, the following five were the best producers of ears, and yielded in the order in which they are placed: Triumph Sugar, 5.8; Top Notch, 5.5; Howe's Yellow Dent, 5.4; Pharaoh's Dream, 5.4; and Early Butler, 5.4 tons of ears per acre. Among these five, the Top Notch produced the largest total amount of green crop, giving a yield of 18.8 tons per acre. It will be seen, therefore, that while these varieties produced a large yield of ears which had reached a more advanced stage of maturity, the amount of ensilage produced by any of them would be small compared with that produced by the heavier yielding varieties mentioned above.

The variety of corn best suited for any given locality for the making of ensilage will be one which will produce a maximum total yield, and a large proportion of ears which have reached the dough stage before it is time to cut the crop in the autumn. Taking into consideration the results of the experiments conducted for the past five or six years, we conclude that such varieties as Henderson's Eureka, Mastadon Dent, and probobly Chase's White Dent would likely give good satisfaction as ensilage corns on the warmer soils of southern Ontario. On the heavier soils in the south and on medium soils in the central part of the Province, White Cap Yellow Dent, Wisconsin Earliest, White Dent, and some of the earlier strains of Leaming are giving splendid satisfaction. We have no Dent corns, however, which are early enough to give general good results in the northern counties, and it is likely that for some years at least Flint varieties will be used altogether in the north. Judging from all of our experience, I would say that the King Phillip, Salzer's North Dakota, Compton's Early, and Longfellow should give best results in the northern districts.

Methods of Cultivating Corn.—In the spring of 1902, an experiment was commenced to determine the relative value of different methods of cultivating the corn crop during the season of its growth. This experiment has now been carried on for five years and has been conducted in duplicate each season. Four plots were used for each individual test. The one which produced the highest yield of green fodder in the average of the five years was given deep cultivation between the rows in the early part of the season, gradually getting shallower at each successive cultivation as the season advanced. This method resulted in an average yield of 20.7 tons per acre. Another plot which was given shallow cultivation throughout the season produced 20.3 tons per acre. A third plot which was given shallow cultivation at first, gradually getting deeper, produced 20 tons per acre, and a fourth which was given deep cultivation throughout the season produced 19.9 tons per acre. It will be seen, therefore, that there was less than one ton of difference in the yield resulting from the various methods mentioned above. When this experiment was commenced it was expected that the plan of cultivating deeply at first and to a lesser depth as the season advanced, would

result in the greatest yield, since that method would avoid interfering with the growth of the corn roots after they had begun to extend through the soil between the rows. It may be said, however, that the difference in yield is not so great as we anticipated.

Other experiments with corn which have been under way for one or more years will not be reported upon until they have been conducted for a sufficient length of time to furnish reliable results.

Varieties of Sorghum for Fodder.—Sorghum is a general name applied to a class of plants which somewhat resemble corn, but differ from this in producing their seed in the tassel at the top of the the stem instead of on the cobs. While all varieties of sorghum bear more or less resemblance to one another, they may be divided into two general classes, namely, saccharine and non-saccharine; or those possessing a large percentage of sugar, and those possessing a much smaller percentage. Seventeen varieties in all were tested on our trial grounds in 1906, and of these, eleven have been under experiment for the past eight years. The following table gives the average yield of green crop per acre obtained from each of these eleven varieties:

Varieties.	Heads	Total Crop
	Tons.	Tons.
Orange Sugar Cane	.33	19.02
Early Minnesota Sugar Cane	.86	18.32
Early Amber Sugar Cane	.76	16.63
Fodder Cane	.79	16.44
Kaffir Corn	.50	12.93
California Golden Broom Corn	1.58	11.92
Improved Evergreen Broom Corn	1.32	9.99
Early Japanese Broom Corn	1.47	9.53
Yellow Millo Maize	.63	9.35
Dwarf Broom Corn	1.40	9.12
Brown Dhoura Corn	.78	7.72

On looking over this table, it will be noticed that the first four varieties have given considerably larger yields than the others. These are all saccharine sorghums, and are therefore not only good yielders but the crop is of high feeding value owing to the large percentage of sugar contained in it. While the broom corns mentioned in this table are grown to a slight extent for the production of fodder, they are used more extensively in the manufacture of brooms, for which purpose the heads only are used; and a glance at the table will show at once that the broom corns have given considerably larger yields of heads than any of the other kinds. The Early Amber Sugar Cane is probably the most commonly grown variety in Ontario, and has been used in a few localities for the manufacture of syrup, though it can scarcely be said that this has been a profitable industry anywhere in the Province.

Millet.

The commonly grown varieties of millet are divided into three distinct classes: those having branching heads somewhat resembling the heads of broom corn are commonly called broom corn millets; those having heads of about the same form as our ordinary Hungarian grass are called foxtail millets. There are several varieties of each of these classes. The third class, of which there is but one variety at present under cultivation, is called barnyard millet.

Varieties of Millet for Fodder Production.—Quite a large number of varieties have been tested on our experimental grounds within the past fifteen years. Eleven distinct kinds have been grown side by side for twelve years in succession. Among these, the five best producers of green crop have yielded as follows: Golden Wonder, 11.2 tons; Holy Terror Gold Mine, 10.7 tons; Japanese Panicle, 10.5 tons; Japanese Barnyard, 10 tons; and Magic, 9.9 tons of green fodder per acre in the average of the twelve years' work. Among twenty varieties which have been grown for the past five years, five of the best have given the following yields: Japanese Panicle, 10.1 tons; Golden Wonder, 9.9 tons; Japanese Barnyard, 9.6 tons; Holy Terror Gold Mine, 9.3 tons; and Magic, 9 tons per acre. It will be noticed here that the same five varieties stand at the top of the list in yield among the eleven kinds grown for twelve years, and among the twenty kinds grown for five years. This seems to be conclusive evidence as to the value of these five varieties. The Golden Wonder, Magic, and Holy Terror Gold Mine belong to the foxtail class of millets; the Japanese Panicle to the broom corn class; and the Japanese Barnyard is the one variety of this class mentioned in the early part of this paragraph.

Sowing Millet at Different Dates.—In 1906, an experiment was conducted by sowing one variety of each of the three classes of millet on eight different dates at intervals of about two weeks: the first three plots being sown on May 2nd and the last three on August 17th. In each case the crops were cut when they had attained their full growth and before they commenced to ripen, excepting those plots which had not attained their full growth when the frosts came in the autumn. The varieties used in this test were Japanese Panicle, Japanese Barnyard, and Hungarian. The plots of Japanese Panicle and Japanese Barnyard sown on August 1st and August 17th, and the plot of Hungarian sown on August 17th were frozen when they had attained a growth of but a few inches. This experiment will be conducted for several seasons, and the chief object in conducting it is to note carefully the relative growth of the different classes of millet when sown at different periods throughout the summer. The detailed results will not be published until a later date, but it may be said that on averaging results obtained from the three varieties, the highest yield was obtained from the first sowing on May 2nd: and the yield decreased as the time of sowing was delayed in each case, excepting that the seeding of July 14th gave a slightly higher yield than that of June 30th.

Varieties of Rape, Kale, Cabbage, etc.

The Dwarf Essex rape has been grown considerably in some parts of Ontario for many years past. It has been used principally as a pasture crop for sheep, but has also been used for feeding, both in the field and in the stable, to young and growing cattle and to hogs. As there are quite a large number of other plants somewhat similar to rape in nature of growth and in the crop produced, it has been thought wise to make a comparative test of these different varieties and classes of crop in order that information may be gleaned as to their relative value for the farmers of Ontario. Therefore, seed of different varieties of rape, kale, Brussels sprouts, and those varieties of cabbage which are grown to a certain extent in Great Britain for feeding purposes, was imported principally from England and other European countries for experimental purposes. These have been introduced from time to time, and we now have the results of tests conducted with fourteen different varieties in each of the past seven years. The seed of these varieties have been sown at the rate of about two pounds per acre, in rows nearly twenty-

seven inches apart. The crop has been cultivated in much the same way as turnips. The following table gives the average yield of green crop per acre produced by each of fourteen varieties for a period of seven years:

Sutton's Earliest Drumhead Cabbage	22.3	tons per acre
Thousand Headed Kale	19.9	" " "
Dwarf Essex Rape	19.0	" " "
Dwarf Victoria Rape	18.7	" " "
Purple Sprouting Broccoli	18.5	" " "
Sutton's Earliest Sheepfold Cabbage	18.1	" " "
Marrow Collards	17.5	" " "
Hardy Curled Kale	17.2	" " "
Sutton's Best of All Savoy Cabbage	17.0	" " "
Marrow Stem Kale	16.8	" " "
Jersey Kale	16.5	" " "
Tall Green Curled Scotch Kale	14.4	" " "
Brussels Sprouts	13.5	" " "
Sutton's Latest Drumhead Cabbage	13.2	" " "

In 1906, there were in all thirty varieties of this class of crops tested on the experimental field. The five largest producers of green crop stood in the following relative position in regard to yield: First, Sutton's Earliest Drumhead cabbage; second, Thousand Headed kale; third, Sutton's Giant Drumhead cabbage; fourth, Dwarf Essex rape; fifth, Large Seeded Umbrella rape.

Besides the experiments discussed in this report, a number of others are under way and the results of these will be presented from time to time in the future as they become of value to ourselves and to the public.

In conclusion, I wish to thank you most heartily for the encouragement and support you have given me in the work of the department during the absence of Professor Zavitz.

Respectfully submitted,

J. BUCHANAN.

A section of our plant breeding grounds, showing winter wheat tests.

PART XIV.

THE LECTURER IN FORESTRY

To the President of the Ontario Agricultural College:

Sir,— I have the honor to present herewith the report of the Forestry department for the year 1906.

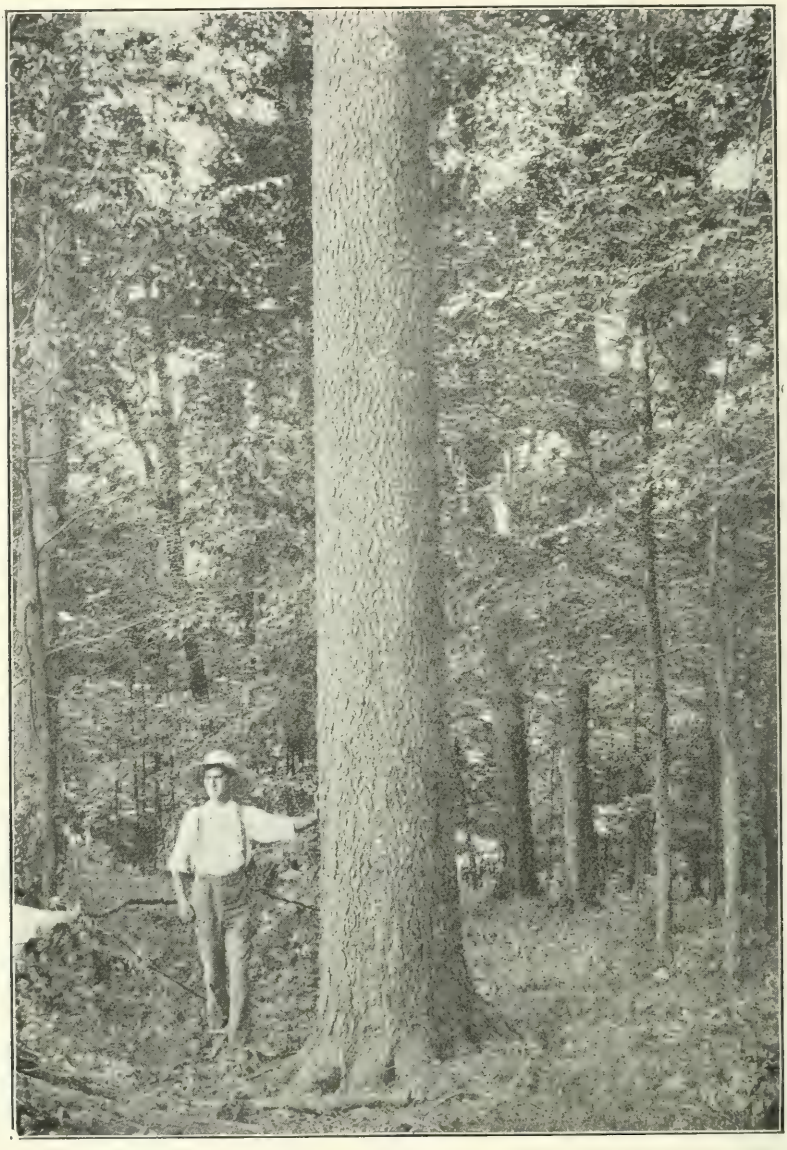


FIG. 1.—Black Cherry, thirty inches in diameter in south College woodlot. From this species of Cherry the valuable red cherry finishing and furniture wood is obtained.

The courses of lectures as outlined in the College circular have been delivered to the second and fourth year students. Lectures have also been delivered to the Nature Study students. The endeavor has been to give the students a general knowledge of forest conditions, but more especially to

teach the principles of forestry as related to the farm. It has been assumed that a knowledge of tree growth in relation to planting waste land and protection belts and the care of the woodlot, is indispensable to the present day agriculturist.

A bulletin on Farm Forestry has been prepared which deals in detail with tree planting in its various phases and the care of the woodlot.

College Woodlots.

Improvement work has been carried on in the College plantations and woodlots. Dead branches have been pruned out of plantations and gaps planted about borders with Norway spruce. The woodlot at the south of the Farm contains a ridge which had so few trees left that grass and weeds took

Catalpa. Tulip. White Elm.

Fig. 2. Seedlings in College Nursery.

possession of the soil. This ridge has been cleared and prepared for the planting of native White Pine. In early planting work on this farm foreign Pines were planted, but there exists no plantation of our native White Pine. I believe that the Native White Pine would have given better results in this soil than the foreign pines, and hope to demonstrate it by making it test planting in the denuded part of the south woodlot.

Considerable lumber of Maple, Basswood and Elm was supplied to the Mechanical department from trees taken off this ridge in the south woodlot, A quantity of stove wood cut from trees or parts of trees which could not be utilized for lumber, was distributed amongst departments for fuel. As no cutting or care was given the woodlots for a number of years, there exist many defective and overmature trees which will gradually be taken out and utilized as fuel or lumber.

The north woodlot had no definite boundary and was open to stock-grazing. This year a fence was placed about this woodlot and a parcel of land about three acres in extent which was naturally included in the woodlot. A corner of the woodlot about one quarter of an acre in extent was left

in the adjoining field as a clump for protection to stock in the summer. Fields which are frequently pastured and permanent pastures should have clumps of trees for the protection of stock during the heat of the day.

The three acres which have been incorporated with the northern woodlot will be planted with Black Locust and Hardy Catalpa as an experiment in producing fence posts. This woodlot is a fair type of the average Ontario woodlot as it has had an indefinite boundary and borders filled with weed trees and sod, neither pasture nor woodlot. It is desired to make every foot of the soil now fenced in produce tree growth of value.

Nurseries.

The nursery work has been enlarged this past season by the addition of the Holmwood Nursery ground, four acres in extent. As was intimated in last year's Report, this ground is being used in growing evergreens. In this nursery we have seed beds of Norway Spruce, White Spruce, Arbor Vitae or White Cedar, and White Pine.

Fig. 3. Three year old White Pines in Holmwood Nursery.

At present the most practicable method of obtaining evergreen planting stock for our work is to import the seedling and place it in the Nursery until ready for distribution. This applies to Norway Spruce, Scotch Pine, Larch, and White Pine. In the case of White Pine we buy the two-year-old seedling in Germany for about seventy-eight cents per thousand. This plant is placed in our nurseries for one year and is then ready for distribution.

The best 1906 American quotation on White Pine is sixteen dollars per thousand for three-year-old transplants, and five dollars per thousand for two-year-old seedlings. This great difference is partly owing to the availability of cheap labor in German nursery work and partly to the perfect organization of their nursery work.

The following planting material was imported this last season:

10,000—3 yr. old Scotch Pine.
50,000—1 yr. old Scotch Pine.
50,000—4 yr. old Norway Spruce.
50,000—2 yr. old White Pine.
75,000—3 yr. old White Pine.

The greater part of three and four year old planting material was used in last season's co-operative work. The remainder of the Nursery stock was placed in the Holmwood Nursery in preparation for planting this coming season. There is at present in the Holmwood Nursery the following:

White Pine—1 yr. old Seedlings	150,000
" " —3 " " Transplants	45,000
" " —4 " " "	15,500
Norway Spruce—1 yr. old Seedlings	50,000
" " —5 " " Transplants	10,000
Scotch Pine—2 yr. old Transplants	17,500
" " —3 " "	15,000
Arbor Vitae—1 yr. old Seedlings	25,000

FIG. 4. Holmwood Nursery.

The Nursery at the College has been mainly devoted to growing hard woods for experimental and co-operative work. In this Nursery we have trenched or heeled in the following:—

Tulip or Whitewood, 2 yr. old	11,500	White Elm, 1 yr. old	22,000
Tulip or Whitewood, 1 yr. old	2,000	Soft Maple " "	8,000
Box Elder or Manitoba Maple, 1 yr. old	12,000	Black Locust, 1 yr. old	18,500
Black Cherry, 1. yr old	2,000	Red Oak " "	12,500
Hardy Catalpa 1 " "	30,000	Butternut " "	200
		Black Walnut " "	500
		Hickory " "	1,000
		Chestnut " "	100

There is also at these grounds 40,000 Norway Spruce, three year old transplants, which will be transferred to the Holmwood Nursery for another year.

In addition to the above forest nursery stock we have in the College Nursery a quantity of special planting material to be used in landscape work about the College. Landscape planting work from this material has been commenced by planting a coniferous belt along the western boundary of the Macdonald grounds.

Co-operative Planting.

The Forestry problem can probably develop more sentiment in a given time than any other known branch of work when brought under discussion. Everybody likes trees in the abstract and has nice things to say about them.

Popular discussion is valuable, but what is needed in this Province is thorough demonstration of the practicability of redeeming waste lands and making them productive.

Believing that the demonstration of such work can be carried out only by Government assistance, and that such work is the chief function of a Department in Agricultural Forestry, we are giving the co-operative planting work the greater part of our attention.

The following is a copy of Circular No. 1 which has been published for distribution this last season:

The Department of Agriculture of the Province of Ontario desires to assist farmers to improve their woodlots, plant shelter belts and reforest waste portions of the farm. To accomplish this a system of co-operation is to be carried on as follows:

The Department, as far as the means at its disposal will permit, will assist in the growing of a forest plantation, woodlot, shelter belt or wind break, by directing through one of its officers as to preparation of soil, varieties to plant and manner of planting and as to care after planting.

The Department will also endeavor to furnish tree seeds, seedling trees or cuttings as planting material free of charge, but the person receiving such material shall pay the cost of transportation by express to nearest express office.

Two acres will be the largest area for which the Department will undertake to furnish planting material in any one year. Larger areas may be planted by arranging to continue the work through successive seasons.

It shall be understood that the owner, on his part, must prepare the soil, plant and care for the trees, and do all the actual work in connection with the plantations, in accordance with the directions of the officer of the Department.

The owner shall also agree to provide protection for the planted trees against animals by fencing or otherwise, and where necessary, against fire by some effective means.

The Department prefers to make plantations on such waste portions of the farm as steep hillsides, light sandy, rocky or gravelly spots, swamp land, portions of farm cut off by streams or otherwise. Such land can usually be profitably devoted to wood production if proper species are planted. However, in certain localities without woodlands it may be found advisable to plant on good agricultural soil, if the owner so desires. In cases where tillable land is to be planted, it will be advisable to summer fallow. Cultivation for one or two seasons after planting on good soils, where rank weed growth might follow, will be of great benefit to plantation.

It will be noticed that this system is co-operative in character. The Department furnishes planting material and expert advice, but does not guarantee to furnish any specific quantity of planting material. The Department reserves the right to accept or refuse applications if in the opinion of the officer in charge the location offered does not afford satisfactory facilities for the experimental and educational features of the work.

It is desired to make this work of educational value, and the owner will be required to allow public inspection of the planted areas whenever this can be done without injury to other crops.

No fruit trees or ornamental shrubs will be distributed by the Forestry Department. No trees will be furnished for planting on town or village lots, or for ornamental purposes. All trees sent out, with the exception of those required for the improvement of rural school grounds, must be for protection or wood production purposes.

The Department does not undertake to distribute nursery stock of such species as oak, walnut, hickory, chestnut, etc. Nut trees can be best grown by planting the nut instead of the young plant, and the owner wishing to grow such species should collect the seed himself, or where this is impossible the Department will endeavor to supply him. In case the owner can obtain nut seeds in his own locality, the Department will give advice as to the methods of collecting and storing.

Last spring planting work was done in the following Counties: Stormont, Durham, Simcoe, Ontario, Halton, Wentworth, Wellington, Brant, Waterloo, Perth, Oxford, Norfolk, Lambton, and Essex. Space will not per-

mit detailed description, but we hope to publish results as soon as it is possible to form a judgment of these plantings. A brief description of two typical cases will serve to show the possibilities of this work. In last year's Report a cut was shown of waste sand land planted in Durham County. About two acres of this land was planted in the spring of 1905. Norway Spruce was planted about the border and the body of the plantation was of native Whi e Pine. The plants were spaced about five feet apart each way. This planting was done without previous cultivation, as it is rough land with areas of blow-sand. Planting lines were made by skimming light furrows with the plow. Tne plants were put in with a common spade and two boys and a man planted about an acre per day. In such soil it should be possible for two men to plant an acre per day. In the autumn of 1905 about ninety-five per cent. of the White Pines were alive. The Norway Spruce did not do as well, only about seventy-five per cent. growing. Our Native White Spruce

Fig. 5. Type of waste land in Norfolk Co., which once produced splendid pine.

would probably do better on this soil. I was afraid of the winter, which was very open with sudden changes of temperature. However, the White Pine showed no winter killing, even in the exposed positions, which was very gratifying. This planting was continued this spring, and in time the owner hopes to have the whole area under trees. It is now a waste field of about eleven acres.

Another type of planting done this last spring in Perth County was with White Pine on a steep hillside. The soil was a loam but very stony. In this planting the preparation of the planting holes took longer, as did the actual planting. The plants were placed about five feet apart each way, the sod was cut off with an old adze, the soil loosed of stones with a pick and the plants put in with a spade. This work probably under any conditions would take twice as long as planting in waste sand land. Planting waste land with White Pine may require anywhere from two men per day per acre to four men per day per acre.

This last spring about twenty plantations were made in the above mentioned counties, and the species used were White Pine, Norway Spruce, Scotch Pine, Larch, Red Oak, White Ash, Elm, Black Locust, and Black Walnut. In all about eighty thousand plants were distributed.

This coming season we hope to make plantations in nearly every county in the older portion of the Province as well as continue where planting has commenced. Applications are coming in from many parts of the Province, and there is a general desire to plant trees. As the practicability of waste land planting becomes understood I anticipate a great demand for planting material.

There are portions of the Province where tree planting is especially required, and to these special attention should be devoted. It is desirable to make a special study of reclamation work in Norfolk County, where sandy wastes are developing; in Simcoe County, where large areas of sandy plains

FIG. 6. Showing erosion of bank on Lake Ontario near the Government Fruit Farm at Jordan. Part of the apple orchard has been taken away in the last few years. Tree planting should remedy this breaking away.

exist which will never be of value in food crop production; along the northern shore of Lake Ontario in what are known as the old pine ridges; in the sand formations along Lake Huron, in Prince Edward County, and along the lakes or rivers where erosion is gradually taking away the land.

The first requirement for carrying out co-operative planting is the forest nursery. We have now a nursery for evergreens, which can be extended as the work develops. I beg to draw your attention to the fact that evergreens are the best suited to waste land planting, and that it takes from three to five years, from the seed, to produce evergreen plants ready for final planting. The possibility and advantage of importing seedling evergreens mentioned above has made it possible to have planting material ready for the coming season.

Conscientious and intelligent labor is required in the successful production of evergreen planting stock. The greater portion of the work occurring in the spring, or for a limited season, makes this one of our greatest problems. The possibility of obtaining suitable student labor during the holidays gives us a solution of the problem for the present.

Respectfully submitted,

E. J. ZAVITZ.

PART XV.

THE MANAGER OF THE POULTRY DEPARTMENT.

To the President of the Ontario Agricultural College:

Sir,—I have the honor to submit herewith my annual report of the Poultry department for the year 1906.

Class-Room Work.

The class-room work for this year was much the same as has been reported in previous years. Lectures were given to the regular course students, to the students at Macdonald Institute and to the Short Course students.

The Short Course in Poultry was well attended. At the close of the Short Course last year we held a Poultry Institute, a full report of which has already been published. This meeting fills a long-felt want among poultrymen and is much appreciated by those engaged in poultry keeping.

New Buildings.

Four new buildings have been constructed during the year—one house 108 feet long by sixteen feet wide. This house is constructed on a cement foundation. The walls are built of single ply boards and covered with battens. The front of the building is about one-third glass and two-thirds cotton. The ceiling is made of boards laid some four inches apart and covered with straw. Our experience with houses in previous years has led us to believe that curtain fronts and straw lofts are excellent.

New Poultry House at O.A.C., Guelph.

We propose to test hens for egg production, etc., in large and in small flocks. The house is divided into three pens with tight board partitions between to prevent draughts. We shall try the first year flocks of 60, 90, and 120 each with equal floor space per bird.

The other three houses are smaller in size, but are built upon much the same principles with the exception that the houses are movable. These houses would answer either for hens or ducks.

Feeding.

In previous reports I have described in a general way the plan we use in feeding, care and management of the stock birds. Several have written to know exactly what and how we feed our hens. One requires to use considerable judgment in feeding, because a bird seldom needs exactly the same food in the same proportions any two weeks in the year; for example, when hens are laying a large number of eggs more food is required and, if in winter, the quantity of meat in the ration could be increased to advantage. To be brief, we feed each morning a handful of wheat or cracked corn to every two hens in the pen. If the hens are laying very few eggs and the breed is small in size, perhaps a handful to four birds would be sufficient. This food is buried in straw so as to make the hens work. Vegetables are kept constantly in front of the fowls, as is also water and beef scrap. The beef scrap may not be absolutely necessary, but if a fowl needs animal food I prefer letting them have it whenever they want to eat it. About once a week we feed some cut bone. If we had plenty of bone, more would be fed —a little every day. Cut bone, cooked meat, etc., are good foods, and where they can be secured untainted I would not feed beef scrap.

The night food usually consists of sprouted oats or barley. I believe that soaking the grain in warm water for four or five hours would make oats or barley more palatable. This is fed from troughs and all they will eat of it. A change may be fed once a week in the way of stale bread, or possibly some other mash food, in place of the oats.

On cold or dreary days a little of the screenings from under the thresher is fed in the litter at noon just to keep the birds moving. In winter we feed frequently dry or steamed clover leaves or give a forkful of hay to a pen of birds.

Incubation.

Last year we mentioned in our report some observations in regard to what was called white diarrhoea or non-absorption of the yolk. It was mentioned there that we considered one of the causes to be a lack of ventilation in the incubator room. Our experience this year, also the reports that have been sent in by one experiment station and by individual operators, seems to go to prove that a strong odor of coal oil in the incubator or room is bad; at least, under these conditions, machines gave poor results, but when the room was well ventilated no bad results were noticeable. These results were reported by a number, but there are a few places where the ventilation appeared to have no effect.

We have found the incubator question to be very complicated, and after careful consideration we decided, with the aid of the department of Physics and Chemistry, to make very careful tests both in natural and artificial incubation. We wished first to find out what a hen does during the process of hatching, as regards temperature, evaporation and air conditions, both as to composition and circulation. This has taken a large amount of detail work. Our results are nowhere near complete, but we have made consider-

able progress. From our experiments so far we find hens can hatch chickens under a wide variation as to evaporation, but the point is, what of the vigor of the stock so produced? We hope to follow this closely next season. We have operated incubators at high and low temperatures, machines with very moist air, and with very dry air, etc. It is impossible, at present, to draw definite conclusions, but I feel that we are gaining considerable information that will be very useful in our experiments from year to year.

Below are given tables that may interest many. In the report of the Physics department will be found some information on this subject.

Incubating Eggs by Hens.

Kind of Nest used.	No. of eggs set	No. of infertile eggs	No. of decayed eggs	No. of fully formed chicks dead in shell	No. of chicks hatched	Av. evaporation of those that hatched	Highest evaporation of any egg that hatched	Lowest evaporation of any egg hatched	Hatch of total set	Hatch of the fertile eggs
						%	%	%	%	%
On ground beneath trees	15	3	1	2	9	12.6	16.9	9.9	6.0	73†
On ground beneath artichokes	15	2	....	1	12	9.6	12.9	7.5	8.0	91†
On ground beneath a large box	15	4	....	.....	11	10.17	17.7	7.0	73†	100
On ground in open field, some protection from long grass	15	2	....	2	11	11.4	14.2	8.2	73	84†
Total	60	11	1	5	43	10.9	.....	.....	71†	87†
On about six inches of moist earth in a box inside a building	15	2*, 0	1	.....	12	11.5	21.1	7.5	80	91†
" " "	15	3	3	.....	9	10.92	14.4	8.6	60	75
" " "	15	1*, 1†	1	.....	12	11.23	13.80	8.40	80	91†
" " "	15	1*, 1†	1	1	11	13.86	17.5	11.	73	84
Total	60	4*, 5†	6	1	44	11.9	.....	.....	73†	85
On chaff in a box inside a building	15	2†, 1*	7	.....	6	11.91	16.3	10.5	40	50
On chaff in a box inside a building, box two feet above floor	15	1*	2	.....	12	12.7	16.7	10.4	80	85†
On chaff in a box inside building. The box about four inches above the floor. The floor of the box was not tight	15	1	1	2	11	12.95	15.3	10.4	73	78†
" " " C.	15	1*, 2†	1	1	10	15.58	16.40	11.40	66	83
" " "	15	3	1	3	8	19.4	27.1	10.2	53	66
Total	60	6†, 2*	5	6	41	15.15	.....	.....	68†	77†
Set in a box inside a building. Box lined with rubber cloth	15	1*, 2	....	.....	12	10.9	15.5	8.3	80	100

* Broken † Infertile

Incubating Eggs by Machines.

Machine	No of weighed eggs	No. of infertile eggs	No. of decayed eggs	No. of fully formed dead in shell	No. of chicks hatched	Average evaporation of the hatched eggs	Highest evaporation of the hatched eggs	Lowest evaporation of the hatched eggs	Percentage hatched of the selected eggs	Percentage hatched of the fertile selected eggs	Percentage hatched of the entire machine	Percentage hatched of fertile eggs of entire machine.
						%	%	%				
New Prairie State No. 1 Moisture Machine	30	4	3	6	17	9.1	13.7	5.9	56.6	65.4	61	70
	15	4	1	2	8	9.25	11.5	7.1	53.3	72.7	50	68
Model No. 2 Incubator	15	2	1	2	10	16.3	24.5	11.7	66	76.9	48	70
	15	3	....	2	10	16.12	18.6	12.7	66	83.3	51	75.4
Chatham Incubator No. 3, no moisture used	15	2	....	3	10	14.0	17.7	10.2	66	76.9	47	65
	15	2	1	1	11	13.81	15.7	12.3	73	84.6	54†	64.9
Open bottom No. 4 Prairie State	15	4	1	2	8	15.37	19.2	11.9	53.3	72.7	45.7	65
	15	2	3	....	10	15.75	18.9	12.7	66	76.9	60.6	75
Chatham Incubator No. 5, moisture applied from the top.	15	1	1	3	10	12†	16.9	8.6	66	71.4	57.4	71
Chatham Incubator No. 5, moisture applied from the bottom	15	1	1	1	12	11.1	21.2	6.9	80	85.7	61.7	76.3

These should not be considered experiments to determine the value of different makes of incubators.

There was some variation in the quality of the eggs used, especially Machines Nos. 1, 5 and 6. Machines Nos. 2, 3 and 4 had eggs very similar in quality.

Machines Nos. 1, 5 and 6 hatched chicks that in appearance were similar to those hatched by hens being large and very fluffy. This is especially true of machine No. 1.

The selected eggs were laid by trap-nest hens. All machines in these tests were operated at a temperature of about 101° on the eggs. The eggs were carefully weighed on the day they were set and on the 5th, 10th, 15th and 18th days of incubation.

The percentage evaporation was figured from the loss in weight for the eighteen days. In nearly all cases the selected eggs hatched better than the balance of the machine, probably due to the selected eggs being from better individuals. It will be noticed that there is a wide variation in the evaporation of the eggs hatched in the same machine even when laid by the same hen. Eggs laid by the same hen hatched under a wide variation in evaporation under different methods of incubation.

From these tests it would appear that hatchable eggs may be hatched between an evaporation of 27 per cent. and 5.9 per cent.

Individuality of Eggs Laid by the Same Hen in Evaporation and in Hatchability.

Hen's number.	How incubated.	Percentage evaporation.	Result.
5142	Machine No. 1	8.0	Hatched.
5142	" "	8.2	Decayed.
5142	" "	5.9	Hatched.
5142	" "	6.6	Hatched.
5905	" "	7.8	Fully formed, dead in shell.
5905	" "	8.9	Fully formed, dead in shell.
5905	" "	8.3	Hatched.
5905	" "	8.4	Hatched.
234	Hen on ground	13.0	Hatched.
234	Machine No. 5	10.0	Hatched.
234	" No. 6	8.3	Hatched.
234	Hen on raised nest	11.3	Hatched.
234	Hen on board and straw nest.	9.6	Chick about one-half formed.
234	Machine No. 4	17.8	Hatched.
234	" No. 3	10.2	Hatched.
234	" No. 2	14.1	Fully formed, dead in shell.
50	Hen on raised nest	23.5	Hatched.
50	Hen on raised nest	20.0	Fully formed, dead in shell.
50	Machine No. 3	13.6	Hatched.
50	Hen on raised nest	14.5	Fully formed, dead in shell.
50	Hen on raised nest	12.3	Hatched.
50	Hen on raised nest	14.2	Hatched.
50	Hen on ground	11.6	Hatched.
50	Hen on ground	7.3	Fully formed, dead in shell.
50	Hen on ground	7.2	Fully formed, dead in shell.
7099	Machine No. 5	19.7	Fully formed, dead in shell.
7099	" No. 6	15.1	Hatched.
7099	Hen on raised nest	16.7	Hatched.
7099	Hen on board and straw nest.	14.3	Hatched.
7099	Hen on earth nest	21.1	Hatched.
7099	Machine No. 3	24.7	Fully formed, dead (a deformed chick).
7099	Machine No. 2	22.6	Hatched.
7099	Hen on rubber nest	15.5	Hatched.
7099	Hen on ground	12.9	Hatched.
7099	Machine No. 1	11.3	Hatched.
7099	Hen on ground	14.4	Hatched.
7099	Hen on ground indoors.	17.5	Hatched.
7099	Hen on ground indoors	15.1	Hatched.

I cannot state as to the vitality of the chicks so hatched at this time. I would prefer keeping the evaporation nearer to the hens which were set out of doors upon the ground. It appears to me that this is nearer nature, and the chicks so hatched did well in the majority of hatches. There was a large per cent. of carbonic acid gas under the hens in the air around the eggs. The temperature of the air was about 101° F., and the relative humidity was somewhat less than the air in the room.

Rearing Late Hatched Chicks.

For experimental purposes we ran incubators and set hens during the summer months. The chickens so hatched we wished to raise for two weeks at least, and after careful consideration of our conditions we decided to use only hens as brooders. We selected as a rearing ground a twenty acre corn

field and used the hopper system of feeding. The corn field was considerable distance from the plant and no water was nearby, hence we made no pretence to water the chicks. I would not at present advocate not watering chicks, but I mention this fact in connection with the conditions under which the chicks were raised. The plan adopted was somewhat as follows: The broody hens were given chicks after dark. They were usually allowed to hatch two or three chickens previous to getting those from the machine. The next day they and the chicks were removed to coops in the corn field and the chicks were shut in the coop with the hens. A small hopper was placed inside each coop. The feed in the hopper was wheat and cracked corn. In some instances oatmeal was added, in others some commercial chick food, and in others bread crumbs. The hen and chicks were confined to the coop for from two to four days, depending upon how well the hen mothered the chicks. Usually about the third day the hen and chicks were released from the coop and allowed to run at large. A hopper containing about a bushel of wheat and some cracked corn was put down near the coop. The coops were placed near this hopper to the number of about six, or say, one hundred chicks to each hopper. The next hundred would be placed some distance away. The colonies rarely mixed and the chicks did remarkably well, as the figures below will show.

We had one lot of chicks taken from the same machine as those in the corn field, but grown in a run with large chickens. The ground in this had had chickens grown upon it for a number of years. These chicks were not disturbed much by the larger birds. When twenty-six days old the chicks in the corn field weighed 8.5 ounces each, while those in the old run average 3.25 ounces each.

When eight weeks old the chicks in the corn field weighed two pounds each, while those in old ground weighed 10.6 ounces each. The weights given were nearly the same for all lots so raised. We did not weigh every lot, but did weigh several with practically the same results. When four months old the cockerels raised in the corn field weighed five pounds each without food in the crop. The birds were not moved until the corn was cut and the field ploughed, or about November 1st. The large cockerels were then crate fed. While in the field there were two snow storms, one of which left the ground covered for nearly two days.

I consider to grow the best chickens with the least trouble that a cultivated hoe crop and hopper feeding are worthy of serious consideration.

The chicks when running in the field refused to eat beef scrap at the commencement and none was offered later.

One hen laid in twenty days after being put out with chicks. Nearly all the hens laid in reasonable time and their plumage was glossy.

Fattening Experiments.

In previous years we did some work in comparing the value of sour milk and whey as materials for wetting ground grains for feeding chickens. We conducted a limited number of experiments this year with both whey and sour milk. We have also conducted some experiments in the feeding of molasses.

We received from the Shredded Wheat Co., of Niagara Falls, some waste food, which I presume is largely broken biscuits and floor sweepings.

They wished us to test it as food for growing chickens. We used it in our fattening experiments along with ground wheat and bread. The bread used was waste material that comes from the ordinary household.

This year we fed a few chickens for one week only. The results of the experiments are given in the table below.

We have figured shredded wheat, bread and ground wheat to be worth each $1.40 per hundred pounds.

The grain mixtures are figured at $1.25 per hundred pounds, whey at four cents, and milk at ten cents per hundred pounds, and molasses at four cents per pound.

Testing Rations for Feeding Chickens. Period of Feeding Two Weeks.

Rations.	Number of birds.	Date of feeding.	Weight at beginning of experiment.	Weight at end of first weeks' feeding.	Weight at end of second weeks' feeding.	Pounds of grain consumed.	Pounds of grain to make one pound of gain.	Pounds of milk or milk substitute.	Cost of milk or milk substitute.	Cost of grain.	Total cost.	Cost of one pound of gain.
			lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	cts.	cts.	cts.	cts.
Shredded wheat and sour milk.	12	Sept. 29.	55½	64	70½	49	3.26	100	10.	68.6	78.6	5.24
Shredded wheat and sour milk.	12	Oct. 22..	51	59	61½	41	3.90	86	8.6	57.4	66.0	6.28
**Bread and sour milk	12	Oct. 22..	49	56	55	38	6.19	81	8.1	49.4	57.5	9.58
Bread and sour milk	12	Oct. 11..	52	58½	59½	42	5.60	87	8.7	54.6	63.3	8.44
Ground wheat and sour milk.	12	Oct. 11..	53½	60½	65½	56½	4.73	104	10.4	73.4	83.5	6.96
Ground wheat ane sour milk.	12	Oct. 22..	54½	60	63	43½	4.57	87	8.7	56.5	65.2	6.86
*Ground wheat, molasses and sour milk.....	12	Oct. 22..	50	59	60	39	3.90	†86	28.1	50.7	78.8	7.88
Equal parts shredded wheat and corn meal mixed with molasses and sour milk.....	12	Sept. 30.	45	53¾	60½	39	2.51	‡79½	29.4	48.7	78.1	5.04
Equal parts shredded wheat and corn meal mixed with molasses and sour milk.....	12	Sept. 29.	52½	62½	66	52½	3.9	92	9.2	65.6	74.8	5.54

* Four birds in this experiment developed feather pulling.
** Droppings were green last two days of experiment.
† Including 5 lbs. molasses costing 20 cents.
‡ Including 5½ lbs. molasses costing 22 cents.

Test Ration for Fleshing Chickens. Period of Feeding, One Week.

Rations	Number of birds	Date of feeding	Weight at beginning of experiment.	Wt. at end of first weeks feeding	Pounds of grain consumed	Pounds of grain to make one pound of gain	Pounds of milk or milk substitute	Cost of milk or milk substitute	Cost of grain	Total cost	Cost of one pound of gain
			lbs.	lbs.	lbs.	lbs.	lbs.	cts.	cts.	cts.	cts.
One-third shredded wheat, cornmeal and oatmeal, whey and molasses	12	Oct. 18	58½	67	21	2.47	*48½	14.	26.2	40.2	4.73
One-third shredded wheat, cornmeal oatmeal and sour milk	12	"	60	69	21	2.33	42	4.2	26.2	30.4	3.38
One-third shredded wheat, cornmeal, oatmeal mixed with whey	12	"	54	62½	20½	2.73	42	2	25.7	27.7	3.68
Shredded wheat mixed with whey	12	Oct. 8	49½	56	23½	3.61	44	2	32 .	34.9	5.36
Half shredded wheat, cornmeal, molasses and sour milk	12	Oct. 7	53	60	20	†2.85	†41	13.9	28.	41.9	5.98

* Including three pounds of molasses costing 12 cents.
† Including two and a half pounds of molasses costing 10 cents.

Notes on Feeding Experiments.

It will be noticed that a mixture of grain gave better results than any single food. We have had similar results in previous years, and generally speaking I would recommend a mixed ration in preference to one composed of any single grain.

Molasses has not so far proved to be an economical food as to cost or number of pounds of gain produced. It also appeared to induce feather pulling.

Whey did not give as good results as milk, yet is a food worth considering. This year's tests and last year's tests both indicate that whey has considerable value.

Shredded wheat made a better showing than either bread or ground wheat. The chickens feed on bread soon tire of the ration and in one instance develop indigestion. Ground wheat was relished better for the entire period of feeding than was shredded wheat, but did not make as economical gains.

Weed Seeds as Feed for Poultry.

Through the kindness of the King Elevator Co., of Port Arthur, and the Seed Commissioner at Ottawa, I secured a sack of ground weed seeds, also a sample of the weeds from which the ground feed was prepared. To test the value of this food for poultry we selected some twenty individual, healthy birds. The birds were weighed individually and divided into five groups of four each. One group was fed ground weed seeds and milk; an-

other was fed ground weed seeds and water; another was fed ground weed seeds and whey; another was fed half cornmeal and half weed seeds and sour milk; and another was fed half refuse shredded wheat biscuit and half weed seeds mixed with milk. The birds absolutely refused to eat any of the rations, with the exception of the last mentioned ration. We tried in many ways to get them to eat the food, but failed entirely.

To find out whether the weed seeds would make a food regardless of their palatability, we took sixteen birds and crammed them with weed seeds mixed with water. The results were that the birds appeared to be unable to digest the food. Apparently there are some seeds which are indigestible, so far as chickens are concerned. If the crops were moderately well filled it would take almost 36 hours to empty them; so that we found to feed them twice a day we could give but very small quantities. The food did not seem to satisfy the birds at all; or, in other words, when they were put back in the coops they would whine and be constantly looking for something to eat. They acted as if they were starving to death. In fact, after feeding one week we found it necessary, in order to save the birds' lives, to change the method of feeding entirely. Below is given a table which will show the gains and losses of the birds as fed upon weed seeds and shredded wheat, and also when the birds were feeding upon weed seeds and changed to a fairly changed to a faily palatable ration:

Table showing the gains and losses of the birds as fed upon weed seeds and shredded wheat, also when the birds were fed upon weed seeds and changed to a fairly palatable ration:

No. of Birds.	Date of Comencement.	Weeds, Seeds and Water. Weight at Commencement.		Weight at end of first week. (Crammed)		Weight at end of ten days feeding cornmea oatmeal, shredded wheat and sour milk.			
		lbs.	oz.	lbs.	oz.	lbs.	oz.		
1	Sept. 29	3	8	3	2¾	3	6¾	This bird was very sick after second day and never fully recovered.	
2	"	3	4½	2	15½	4	0		
3	"	3	9½	3	5½	4	5½		
4	"	3	5	3	0	4	4½	All 16 birds were very dull looking, extremely thin and some had food in crop 36 hours after cramming.	
5	"	4	2¾	3	12	5	1½		
6	"	2	13¾	2	11	3	11½		
7	"	8	8¾	3	6½	4	9½		
8	"	2	14½	2	11½	3	11½		
9	"	3	5¾	3	2½	3	4½	Very sick, did not eat for 2 days after cramming.	
10	"	3	12½	3	5½	4	7½		
11	"	3	10	3	5	4	3¾		
12	"	3	10½	3	4¾	4	0¾		
13	"	3	9½	3	4	4	0¾		
14	"	2	14	2	9½	3	6		
15	"	3	14¾	3	0¾	4	0¾		
16	"	4	2½	3	13½	4	12¼		
		Shredded Wheat and Weed Seeds.				2nd week.		3rd week.	
17	"	3	0¾	3	5	3	7½	3	10¾
18	"	3	7½	3	6¾	3	5	3	9¾
19	"	3	0½	3	2	3	9¾	4	2¾
20	"	3	15½	4	2	4	7½	5	2¼

Testing Three Varieties of Ducks for Growth.

This experiment was begun July 28th and continued for nine weeks. It might have been more advantageous to have conducted the experiment earlier in the season, but owing to pressure of other work we were unable to make the test satisfactorily at an earlier date. It would not be well to draw conclusions from this test. Another year we shall try to have one or more similar tests.

It will be noticed that the Indian Runners were killed earlier than the others, which was due to the fact that they feathered faster and therefore were ready for the market earlier. The parties to whom we shipped the Indian Runners complained of their small size and their lack of meat.

Name of Breed.	No. of Birds.	Wt. at commencement.		Wt. at four weeks.	Wt. at eight weeks.	Wt. at nine weeks.	Food consumed.	Lbs. of grain to make 1 lb. gain.	Wt. of four largest nine weeks.
		lbs.	oz.	lbs.	lbs.	lbs.	lbs.		lbs.
Pekins	15	2	7	23	62½	71½	188	2.6+	22
Cayugas	13	1	13	19	50½	56	169¾	3.12	17½
Indian Runners	15	1	13	18	50	*	148¼	3.0—	14

*Killed at eight weeks.

The staple food fed was a mash composed of four parts cornmeal, three parts oatmeal, one part shorts, to which was added 25 per cent. meat meal. The mash was mixed with cold water. Sprouted wheat and bread and milk were fed once daily, being last feed at night. The ducks were fed four times daily until six weeks of age, then three times daily.

Geese.

We had much better success with geese this year than last. Our geese have no water except what is given for drink. Most of the geese laid eggs which hatched well, but one goose in particular never laid a fertile egg. I believe, however, we raised an average crop of goslings. Some of these we killed and dressed at nine weeks of age. When dressed they weighed about ten pounds each. I cannot say whether the market for these goods is limited or not, but judging from the reports we received from consumers, geese at this age are good eating.

We succeeded in rearing three goslings from a pair of wild geese. The old geese came from Winnipeg, and I understood from the party who sent them to us that they were three years old. The goose laid four eggs and hatched four goslings. One gosling died during the second week, the others grew well. The wild goslings present a very fine appearance when dressed, the breast, especially, being well developed.

I wish to thank both yourself and the Minister of Agriculture for the kindly support given me in the work of the Poultry department.

Respectfully submitted,

W. R. GRAHAM.

PART XVI.

THE LECTURER IN APICULTURE.

To the President of the Ontario Agricultural College:

Sir,—I have the honor to present herewith my report as Lecturer on Apiculture. The usual course of eighteen lectures and outdoor demonstrations with bees was given.

In producing comb honey one of the chief labors of a colony is the making of wax. To manufacture this a high temperature is required, and cool weather quickly affects the work in the supers. This year, out of thirty colonies that were run for comb honey, I chose ten of average strength and tried to give them some protection that would keep up a high temperature. They were packed in chaff hives just as if for winter. Comb honey supers were placed upon the brood chambers and covered up with six inches of shavings.

The honey flow this year was so scanty, that little difference could be discerned between the two lots of colonies, but what there was favored the protected hives. More bees were to be found in their supers on cool days and the sections at the sides of the supers were better filled: but in none of the hives, on account of the poor season, were there any first-class sections. There were no swarms from either lot.

In September last year sixteen colonies were prepared for winter as follows: The hives were eight frame Langstroth contracted to seven frames and fed until the combs were full, except where a few square inches of comb were occupied with brood. Inverted queen excluders were placed over the combs and on top of them well propolized quilts. Four hives were then placed together, side by side, as closely as possible, first putting a double thickness of cotton batting between the hives, so that no air could get between them. The covers of this row of hives were removed and a layer of cotton batting placed on top of them, and then upon that a sheet of mineral wool, and on top of this another row of hives treated exactly like the first. Then a third row and a fourth. But there was neither cotton batting nor mineral wool on top of the last row. Twelve inches of shaving were placed on top of the pile of hives, and on all sides except in front, which was left exposed to the weather. The shavings were kept in place and protected from the weather by inch sheeting, and on the roof by tar felt besides. The entrances of all but the bottom row were contracted to two inches, in order that the bottom board, which was the cover of the hive beneath it, might not become cold. The contracted entrances were cleared of dead bees by means of a bent wire twice during the winter.

The object aimed at was to pack the hives in the cheapest manner possible, to utilize the animal heat from the hives, and to make the bees fly during the winter.

The hives were protected by a high woods on the northwest, and the hive entrances faced the southeast. The winter was abnormally mild, and the sun, warming up the face of the hives which had no protection, caused the bees to fly a great deal, perhaps too much. The hives were opened and examined the first of May. There did not seem to be any difference between the interior and exterior ones, so far as the condition of the stores and combs went, there being no mold on them. All the hives showed evidences of winter laying, and two of the interior colonies were dead from starvation from this cause. This, however, occurred to a greater or less extent in those wintered in the ordinary chaff hives, and was attributed to the very mild winter.

Respectfully submitted,

H. H. ROWSOME.

PART XVII.

THE DIRECTOR OF HOME ECONOMICS.

To the President of the Ontario Agricultural College:

Sir,—I have the honor to submit herewith my third annual report on the work of the Home Economics Department for the year 1906.

The Year's Work.

The Home Economics Department has been almost wholly occupied during the past year with the instruction of students. As hitherto, two main objects have been held in view,—the one, by means of the Homemaker course, the Short courses in domestic science, and Optional Courses, to help the young women of our country in their business of homemaking; the other, to train teachers of domestic science who are expected to further the interests of Canadian homes by developing and deepening our schoolgirls' interest in the problems and work of their homes. The effort to provide an adequate Housekeeper course for women who desire training for institutional housekeeping continues. No great changes have been made during the year, but it is hoped that those made will strengthen weak points and improve the different courses.

The Courses of Study.

The different courses are pretty fully outlined in the College calendar. It will therefore be unnecessary to specify each subject studied.

1. *The Normal Course* continues two years. The Junior Class devotes its time chiefly to acquiring accurate and practical knowledge of household affairs, to the study of elementary chemistry and physiology, psychology, history of education, general methods of teaching, school accounts, and University first-year English. Twelve students entered this class in September, 1905. All passed the examinations last June, and ten are now in attendance as Senior Normal students. Nine entered the Junior Normal class last September.

The Senior Normal class studies further science work and household affairs and also University second year English, but the major portion of their time is devoted to the careful study of the problems of teaching domestic science and to the observation and practice of teaching. Each student is required to plan and carry out three demonstration lectures in cookery, and to observe and report on many others. Each is required to observe and report on many domestic science lessons taught to public school classes and must also teach a certain number of public school lessons. This class is fortunate in having actual public and high school classes to teach, and also in being permitted to observe the domestic science teaching which is carried on in the Macdonald Consolidated School and in the Guelph Central School. The practice-teaching is carefully supervised and is the most valuable part of the Normal student's training. Three practice-classes are sent up from the Guelph public schools and two from the High School. They are not so

large as at first, when Guelph employed no domestic science teacher, but are satisfactory for our purpose since they provide children of different ages. Fifteen students passed into this class in September, 1905. Twelve passed the final examination in June, 1906, and have received the Macdonald Institute Teacher's Certificate in Domestic Science. Ten students entered this class last September.

Certain experienced public school teachers are admitted to the Senior Normal class. They are given credit for previous science and Normal training, they are not required to take the English, and their classes are arranged to allow them to make up the remaining Junior Year subjects. They are called One Year Normal Students, and their course is a heavy one. For experienced public school teachers who have had good practical experience in household affairs and who have studied elementary chemistry, the course is very satisfactory. Many of our best domestic science teachers are of this class, but their success is largely due to the home training which taught them something of the difficulties and resources of the homemaker. The teacher who has spent most of her life between school and teacher's desk is apt to find one year much too short time in which to gain the necessary practical experience. The teacher whose experience consists chiefly of the training of a domestic science school is at a disadvantage before children whose mothers expect her to be a mine of information on all household matters. We would not discourage teacher-students, but they should be warned of possible disappointment. Last year and this year we were unable to accept all the applications for this course owing to the limited amount of Normal course instruction and practice-teaching available. Those chosen last year formed a strong class, and this year's class promises well. Eight entered this course in September, 1905. Seven passed the final examinations in June, 1906, and have received the Macdonald Institute Teacher's Certificate in Domestic Science. Eight students entered this class last September.

Every effort is made to train each Normal student to study the problems of her chosen work, to use the subject as a means of developing intellectual power in children, and to teach good Elementary Domestic Science. We believe this course has been strengthened by decreasing the number in the class, which gives each student more practice teaching and more careful instruction in methods, and by adding some practice in School Accounts. The addition of University first and second year English will enable our graduates to secure a better standing if they wish to study further in other schools.

2. *The Homemaker Course* continues one year, but may be broadened and extended over two years. It is planned for girls who look forward to living at home, and desire to prepare for homemaker's duties. It is especially planned for girls who have had little practical experience of household affairs. From the very nature of the work the homemaker is thrown much upon her own reources, and should be capable of dealing intelligently with difficulties as they arise. Macdonald Institute cannot transform a girl in her teens into an expert housekeeper, or develop abnormal wisdom in her, but the course is certainly beneficial to the girls who are in earnest. Older students also find the systematic study of familiar things very profitable. This course aims to give the girls, by means of many lessons and much individual practice work, a good elementary knowledge of the different branches of ordinary household work: to develop their interest in some of the housekeeper's administrative problems, and above all to induce them to think about the greater questions of sound bodies, wholesome dwellings and real homes. The average

student is inexperienced in the ordinary work of a household. She is therefore taught the best methods and processes of elementary cookery and sewing, housework, laundry, etc., and she is required to do a great deal of practical work. Lectures are given them on Foods, Sanitation, Home Nursing, Physiology, and lessons in English and the keeping of household accounts. Required sewing work includes plain hand sewing, undergarment and shirtwaist making, but students proficient in any or all of them before entrance are permitted to substitute a more advanced sewing class or another optional subject. After a certain amount of instruction in the class rooms, each student is required to keep house in the apartment for a week, during which time no other work is required of her. She enters and works with her predecessor one whole day before assuming full responsibility. She is given money and is expected to do the marketing, to cook and serve the meals for the two members of the staff who live there, to wash the dishes, keep the rooms clean, and finally to render account of the expenditure. This has become the most popular feature of the course, and is certainly valuable practice in household administration.

It may be necessary to explain that no attempt is made to teach fancy cookery or elaborate processes in any branch of the work, but every effort is made to give each girl a thorough foundation which she may develop into skill in her own home. It is gratifying to report the increasing interest in the course and the approval of it so frequently expressed by visiting fathers.

The course has been strengthened this year by adding lessons in English and in keeping household accounts. Both are sadly needed by the average student of the class. The practical housework has been greatly improved by the careful supervision and inspection rendered possible by more teaching service. When this work was started in the first year considerable opposition was made to it because of the feeling that it was "janitor's work." This has died away, and the warm approval of this practice expressed in many quarters is helping to develop the more sensible attitude that "it is well for a woman to know how the work of a house should be done."

Twenty-five entered this class in September, 1905. Fifteen passed the final examinations and received the Institute Homemaker Diploma. The present class numbers twenty-three.

The Short Course in Domestic Science, which continues three months and is repeated three times each year, continues popular. The work is chiefly practical and is thorough as far as it goes. No examinations are held in connection with this course, but the majority of the students do faithful work. A large number, especially in the Winter term, come from country homes and are eager to make the most of the opportunities offered by the different departments of the College. In consequence, each year we have had a double Short course class in the Winter term, and shall have another next January.

Each student is allowed to choose one optional subject in addition to the required work, and usually finds something to her taste in the varied list of Millinery, English, Horticulture, Dairying, Poultry Raising, Carpentry, Woodcarving, etc. The required work includes plain sewing, but a student already proficient in it is permitted to substitute a more advanced sewing or a second optional subject.

There were in attendance this year:

Winter term, January to March	48
Spring term, April to June	15
Autumn term, September to December	18

4. *The Housekeeper Course* is a professional one, offered to mature women who have had a good deal of housekeeping experience at home and desire training to fit themselves for housekeeper positions in larger institutions. They are expected to have good executive ability before entering and the course aims to give them correct standards in the preparation of food, housework, sanitation, etc., and to train their executive ability along the lines of institution requirements. They are required to take the same science and practical work as the Normal students, but instead of studying school equipments and methods of teaching, they study large kitchen equipments and methods of administration for large buildings, such as our own residences for men and for women. Each student is in turn required to act for a month at a time as Market Woman, Loan Clerk, Stockroom Clerk and Classroom Housekeeper, doing the clerical work of each office. They will be required to supervise the apartment housekepers, and to investigate, with Miss Tennant's assistance, the working of Macdonald Hall. Part of this investigation will consist of becoming a dining-room maid, a housemaid and a kitchen maid for a short time in order to gain accurate and intimate knowledge of the duties and difficulties of each position. The present course is the outcome of a demand both from students and institutions, and it is hoped that each year will see it greatly improved. Judging from the letters received asking for housekeepers, there are many institutions in need of trained women.

Four students entered this class in September, 1904. Three passed the final examinations in June, 1906, and have received the Macdonald Institute Housekeeper Certificate. Five entered the Junior class in September, 1905. Four passed into the Senior class by examination last June; one entered the Senior class by transfer from the Normal class and one by virtue of graduation from the Homemaker class; making six students in the present Senior Housekeeping class.

When a graduate of this class has completed six months of successful work as housekeeper in an institution, she is entitled to the Professional Housekeeper Certificate.

5. *Optional Courses* are made up of subjects chosen from the regular courses and from the list of optional subjects. The number of these students is lessening owing to the fact that they cannot be accepted until the beginning of the term, when it is known what vacancies are left by the regular students. There are none in residence at present. Several optional students have taken full time courses, but the majority are Guelph girls coming for but one or two subjects. There were in the Winter term seven Optional students; in the spring term, four; and in the present term there are six.

Optional Subjects.

The Optional subjects are Millinery, Plain Sewing, Undergarments, Shirtwaists, Skirts, Dressmaking, Dress Drafting and Fitting, English, Diarying, Horticulture, Carpentry Woodcarving, Metal-work, Poultry Raising and various lecture subjects. The sewing classes are always popular, but others secure large classes, notably the Dairying in the Winter term. There is always a Woodcarving class and the satisfactory course in flower and vegetable culture always attracts a good class.

Student Workers.

This is a new feature which enables a girl to pay for a Short Course with work instead of cash. By an arrangement with the housekeeper in Macdonald Hall, we are able to advertise in the year's College Calendar the following:

Terms upon which certain Students may Defray the Cost of the Short Course in Domestic Science at Macdonald Hall.

1. These terms can be offered to a limited number only.

2. The candidate agrees to give Macdonald Hall four months' service as waitress or dining-room girl, submitting to the same rules and regulations as the regular dining-room girls.

3. In return for the above service the candidate will receive one term's tuition in the Macdonald Institute Short Course in Domestic Science and also be given free board and lodging in Macdonald Hall. She will be given all student privileges, and will submit to all rules governing the students.

4. During both periods of service and tuition the candidate will be assigned a share in a double-room among the students in Macdonald Hall.

5. The candidates will be expected to provide the same room furnishings as the regular students. (See page 88 of Calendar.)

6. The term of tuition may be taken any term within one year after the service is given.

7. The contract may be transferred to another person, subject to the approval of the Director of the Department.

The above terms are agreed to

By .....

Date .....

There are now three student workers who began their term of service on September 1st, and who will enter the January Short Course. Three more are ready to take over the service in January, and the arrangement so far has been very satisfactory. It is pleasant to note that Macdonald Institute is open to at least a few of the girls who are willing to work for its benefits.

Special Lectures.

The following series of six special lectures in connection with the marketing course was again carried out successfully:—

Meat..... Professor Day
Poultry and Eggs..... Mr. Graham
Cereals..... Professor Harcourt
Fruit and Vegetables..... Professor Hutt
Canned Foods..... Professor Harrison

By the kindness of Professor Harcourt, who arranged the excursions, the Senior Chemistry Class was last spring taken through the Goldie Flour Mills at Guelph, and recently a trip to Berlin was arranged. They visited the Beet Sugar factory, the Merchants' Rubber Company, the J. T. Shantz and Sons' Button factory, and the Williams, Greene & Rome factory. Everywhere the manufacturers tried to satisfy the curiosity of the girls, and were most kind. The welfare work being carried on in the Williams, Greene and Rome factory was of especial interest. The girls will long remember the dainty cup of tea which was served in the pleasant lunch room of the employees after a long tiring day, and they will watch with keen interest for the further development and spread of the ideas which are there being worked out.

The cooking exhibit of the Fergus Fair and the cooking and sewing exhibit of the Guelph Exhibition were this year judged by members of our staff. It was noted that the bread exhibited by the children of Guelph was a much more creditable display than that exhibited by the adults. Apparently the domestic science instruction in the Guelph public schools is bearing fruit.

At the request of the Provincial Secretary of Ontario, I last spring and summer visited various Ontario Asylums and United States institutions. I went to the Toronto, London, Hamilton and Kingston Asylums; New York State Hospitals in Ogdensburg, Ward's Island, New York, Binghamton, and Buffalo; the Johns Hopkins Hospital, Baltimore; the Butler Hospital, Providence, and Simmons College, Boston. The visits were illuminating and highly instructive. They were of value to the Macdonald Institute work because of the information gained about equipment and the conditions which must be faced by institution housekeepers.

This department was represented at the Ontario Educational Association last Easter by Miss Greenwood, Miss Givin, and myself.

Recipients of the Teacher's Certificate in Domestic Science.

A. Graduates of the Two-year Normal Class.

1. Bickell, Ethel B.....Toronto.
2. Cameron, Margaret I..Durham.
3. Card, Mae .....Wicklow.
4. Davis, Maud R.....Toronto.
5. DeLury, Abbie.....Manilla.
6. Fleming, Annie W....Owen Sound.
7. Gardner, Ruth V.....Niagara Falls.
8. McCaig, Katherine T..Collingwood.
9. McDunnough, Helen .Sorel, Que.
10. McMurchie, Helen....Harriston.
11. Robertson, Agnes.....Toronto.
12. Shaw, Pauline.....Penobsquis, N.B.

B. Graduates of the One-year Normal Class.

1. Bartlett, Katherine...St. John, N.B.
2. Bodwell, Ethel S.....Ingersoll.
3. Cleland, Bessie D.....Ravenshoe.
4. Hamilton, Joan .....Attwood.
5. Penfold, Maud .....Guelph.
6. Prichard, Frances ....Hampton, N.B.
7. White, Lila K. G.....Woodstock.

C. Graduates of the Normal Domestic Science after passing supplementary examinations.

1. Marshall, Frank.....Kenora.
2. Pease, Isabel.....Toronto.

Recipients of the Housekeeper Certificate.

1. Dunbrack, Mrs. Ethel.St. John, N.B.
2. McKenzie, Jean M....Galt.
3. Shand, Erie.....Port Dover.

Recipients of the Homemaker Diploma.

1. Algie, Constance.....Alton.
2. Algie, Cora.....Alton.
3. Beamer, Bertha .....Grimsby.
4. Carter, Edith .....St. John, N.B.
5. Fraleigh, Emma.....St. Marys.
6. Greening, Edna .....Hamilton.
7. Holman, Gladys.....Summerside, P.E.I.
8. McLellan, Lucy .....Ft. Saskatchewan, A.
9. Malcolm, Madge.....Hamilton.
10. Mennie, Mattie.....Fergus.
11. Mortimer, Nellie .....Honeywood.
12. Ross, Mary Effie.....Embro.
13. Thompson, Louise R..Heathcote.
14. Thorne, Elsie M.....Toronto.
15. Weir, Mary B.....Montreal, Que.

Summary of Attendance.

1903-1906.

Total attendance ...	434
Number registered twice, having taken two different courses	24
Non-professional students	352
Professional students	82

January to June, completing the College year of 1905-1906.

Senior Normal Students:	
Enrolled September, 1904	15
Enrolled September, 1905	8
Junior Normal Students	12
Senior Housekeeper Students	3
Junior Housekeeper Students	5
Homemaker Students	24
Short Course in Domestic Science:	
Winter Term Students	48
Spring Term Students	15
Optional Students:	
Six Months	2
Three Months	8
Public and High School classes	96
	236

September to December, opening the College year of 1906-1907.

Senior Normal Students:	
Enrolled September, 1905	10
Enrolled September, 1906	8
Junior Normal Students	9
Senior Housekeeper Students	6
Junior Housekeeper Students	5
Homemaker Students	23
Short Course in Domestic Science: Students	18
Optional Students	6
Public and High School classes	68
	153
Students counted in both of the above lists:—	
In Two-year courses	15
Short Course Students of last year, now in Homemaker Class	1
Homemaker Student of last year, now in Housekeeper class	1
Public School classes	28
	45
Total number of students in 1906	344

STAFF CHANGES.

Miss Speller resigned the domestic art work last June. Some difficulty was experienced in finding a satisfactory teacher, but finally Miss Greist, graduate of Pratt Institute and of Teachers' College training, was chosen. She has been in charge since September and is doing good work.

Miss Holland resigned suddenly in September. Her place is now filled by Miss Ferguson, one of our own graduates.

Miss Bigelow, who gave us efficient Laundry teaching from September, 1905, to June of this year in return for an optional course, board and lodging, was added to the permanent staff in September. She has charge of

the laundry and house-practice and gives most of the Household Administration lectures. The house-practice was organized and up to September conducted by myself, but the work is individual, and its rapid development made adequate inspection impossible. Miss Bigelow's employment makes possible the careful oversight which is so necessary, her time is very fully occupied, and the work is in a much more satisfactory condition.

Graduate Employment.

It is of interest to note what has become of the 49 professional graduates of this department.

Employed in Home Economics Work	25
Employed in other teaching	8
Seek no employment	9
Deceased	1
Unemployed	6

Of those occupied in Home Economics work, one is in the Ottawa Normal School; one in the Guelph, and another in a New Brunswick Consolidated School; one in Vancouver Public Schools; eight in Ontario Public Schools; one in Macdonald Institute; one in the Kingston Y.W.C.A.; two in private schools; one in the Hamilton Hospital as dietician; one giving lectures in several hospitals; two in Women's Institute work in Canada and one in Women's Institute work in North Carolina; four are housekeepers in large institutions and one is Bread Experimentalist for the Ogilvie Milling Company in Montreal.

Equipment, etc.

Our equipment has been improved by the addition of several fine physiological models, which contribute greatly to the physiology and home nursing work. These should be added to until we have a thoroughly illustrative collection.

The work of the Sewing department would be greatly facilitated by the addition of illustrative material which can be used to explain the structure of cloth and the combination of color, and a set of drawers for students' work.

The cork matting recently laid in the corridors is a great improvement and will be especially appreciated next June when the Farmers' Institute excursions are visiting us.

The time is coming to consider the advisability of offering a sewing course which will devote most of a student's time to sewing with electives in other branches in much the same way as the present Short Course devotes most of the time to Cookery and laundry with sewing electives. The demand for it is coming from several directions, but especially from old students who would like to return principally for Sewing. It is possible that by offering such a course in the spring and fall terms, the attendance for the year would be more evenly distributed over the three terms than it has been hitherto.

I beg to acknowledge the valuable assistance given to this department by many of the other departments.

Respectfully submitted,

MARY URIE WATSON.

PART XVIII.

THE PROFESSOR OF MANUAL TRAINING.

To the President of the Ontario Agricultural College:

SIR:—I have the honour to submit to you the third annual report on the work of the Manual Training Department.

Through your generous consideration I was privileged last summer to take two months' leave of absence to visit Britain, and I take this occasion to thank you sincerely for the opportunity afforded me to recruit my health, which had for some time been failing. While there I visited many educational centres,—London, Liverpool, Manchester, Nottingham, Leicester, Tamworth, Birmingham, and Cardiff—having schools and colleges of different types, gathering much information respecting buildings, equipments, courses of study and general organization of Manual Training and Technical Instruction.

Your letter of introduction to Dr. Peterson, President of McGill University, Montreal, secured for me permission to inspect the mechanical departments of that institution. These impressed me as being the best equipped laboratories I have ever seen.

In my last report I pointed out the growing importance of the work and the urgent necessity of better accommodation for its effective progress. Since that time the erection of a handsome building has been undertaken. This is now practically completed, and within a few weeks we hope to have it thoroughly equipped and ready for occupation. It only remains for me to express the hope that the increased facilities which its possession provides, will add to the reputation of the College and increase the already large benefits derived by the students.

The building is a two storied structure of red pressed brick on a limestone foundation, the roof being of slate. It is undoubtedly one of the finest on the campus, and reflects great credit on both architect and builder. The predominating lines are vertical, relieved somewhat by the segmental discharging arches of the upper windows in the piers and the arched copings. It is well proportioned, and on the whole a very pleasing structure, being 146 feet long and 64 feet wide.

The ground and first floors in the south-east wing are occupied by Mr. Crawford for carpentry work. The basement immediately under contains the Farm smithy, the painter's workshop and a room for storing lumber.

The north-west end is devoted to Manual Training. In the basement of this wing is the Forge room fitted with ten Down Draft forges connected with a blower and an exhaust fan and power driven. In addition it is equipped with anvils, swage blocks, and all necessary tools and appliances. Conveniently arranged and closely adjacent are the coal-bin, store-room and offices.

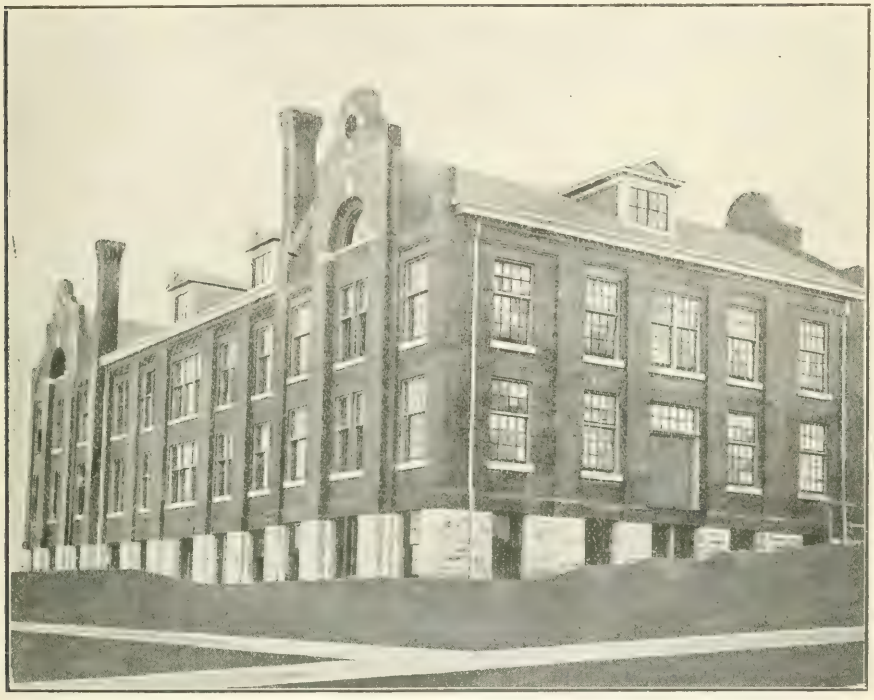
The machine shop is situated on the ground floor and contains two screw cutting Lathes, Power Drill, Power Hacksaw and benches for chipping, filign and fitting, offices and store-rooms. The rooms on the first floor are designed for Drafting and Primary Constructive work. The basement of the central portion provides accommodation for the storage of farm machinery and implements. On the ground floor and immediately over, is Machinery Hall. Above this on the first floor is the Woodworking room.

Machinery Hall has three gasoline engines of six, four and a half, and two h.p. respectively; and will also contain the most modern farm machin-

ery and agricultural implements, separate parts of the same machines and engines to be used for demonstration purposes; a large number of implements, machinery and domestic utensils showing the progress and development of farm appliances from the earliest pioneering days. The Hon. Nelson Monteith, Minister of Agriculture, has already purchased an excellent nucleus for the collection.

The woodworking room will be furnished with twenty benches, a woodlathe, grindstone, and a full equipment of hand tools.

As details of the courses offered by this department appear in the Calendar, and have also been outlined in previous reports, I shall here advert only to that portion of the work which, owing to the lack of accommodation and other facilities, has not yet been undertaken, namely, Farm Mechanics.

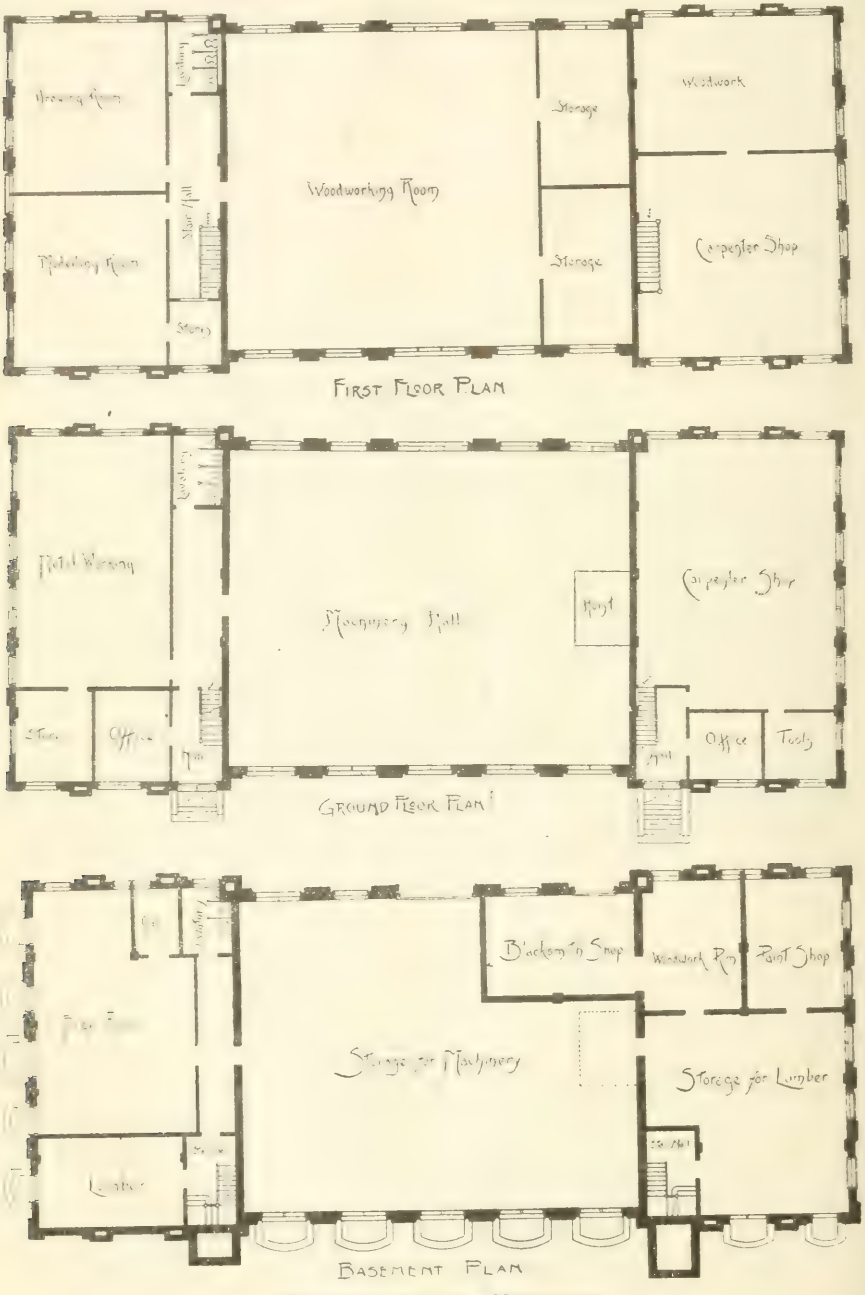


Building for Farm Mechanics.

To conduct this branch in such a manner as will benefit the student and supplement the general work of the College, a further increase in the staff will be necessary before the additional subject can be taken with the greatest effect. The work of the department can never be distributed among two men without sacrificing one of the courses already carried on:—Normal, Nature Study correlated work, or the optional courses.

In the Farm Mechanics Course there will be no attempt to give the students a technical training in any of the mechanic arts, but it is deemed expedient to impart the fundamental principles of mechanics underlying and affecting farm implements and machinery with reference to their construction, operation, adaptability, efficiency and durability; the effect of adjustment and condition of wearing surfaces and edges on draft, and simple repairs.

The course will treat on ploughs, harrows, cultivators, seeders, harvesters, mowers, and self-binders, with special reference to putting and keeping them in adjustment and working condition: detaching parts of farm implements and farm machinery, including grinders, pumps, fanning mills and gasoline engines, etc.; assembling and fixing of parts, testing and getting machines into working order.



Building for Farm Mechanics.

By means of lectures, models, drawing, laboratory work and demonstrations, we hope to show the young farmer how the simple principles of mechanics enter in curiously different ways into his farming practices; that however able he may be as a chemist, physicist or botanist, there is knowledge which cannot be learned through books alone and which can only be acquired through actual contact. He must get to know the properties of materials by chipping and filing, paring and planing; to understand the construction of a plough, its draft and effect upon different kinds of soils, by handling, and learn how to manage it so as to cut a straight furrow, by actual practice. This kind of knowledge must not be something apart from our life and work, but a part and parcel of it. The man who shirks the practical work of the course will lose a great deal more than he is aware of. To effect this object he must perform many simple mechanical experiments and endeavor to overcome any contempt he may have for simple manual operations. In this way he learns much more than from mere theory alone, for through touch he acquires the inwardness of things, and among other things obtains a valuable knowledge of the errors he is apt to make from assuming that he knows without having proved through actual experience; hence, doing stimulates knowing.

Assuming for the sake of making clear the character of the work to be attempted in Farm Mechanics, that the students have received their lesson in Theoretical Mechanics on the First Law of Motion,—"A body perseveres in a state of rest or of moving uniformly in a straight line except in so far as it is changed by external forces." So that once a body is put in motion it will continue in motion and in a straight line unless something checks or hinders it. The resistance to motion must come from without the body itself, and as it is a very important factor when considering work, since a great deal of energy is taken up in overcoming it. It would be well to recall and consider some simple facts bearing on the causes of resistance which we call "friction,"—and point out the importance of adopting methods for reducing it as much as possible whenever it is a drawback to efficient work, and whenever of value, every effort should be made to increase it,—before passing on to discuss in detail an implement in the construction of which friction plays an important part.

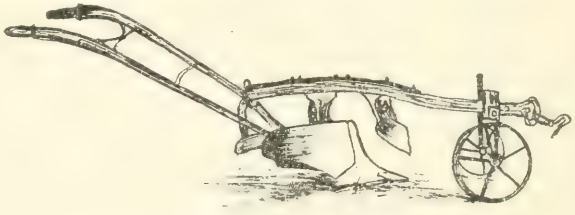
No one, who is accustomed to work, is entirely unacquainted with the fact that resistance can be diminished by smoothing down roughness on surfaces, so that it is not so difficult to push a barrow on a smooth macadamized road, as it is to do it on a rough gravel road. The harder and smoother the surfaces, the less will be the friction. Where hard metal is used the surface should be as smooth as possible. In heavy machinery, next to having all the important bearings of the hardest metal, it is essential to have a constant supply of oil fed to them by vessels attached. In putting wheels on to waggons and other vehicles, the object is to reduce friction; and by smearing the axle with a greasy substance, it is reduced to a minimum. In winter, sledges are used because the hardened surface of the snow becomes smooth, and it is an advantage to the animal drawing the sledge; but get rid of the snow, and the friction between it and the ground is so great that we have to put it on wheels. Here, owing to the circular form of the wheels, the surfaces between them and the road are very small, decreasing the amount of friction to the greatest possible extent.

Having made it clear that a large amount of energy is wasted in overcoming friction, and the need for keeping machinery and implements in good condition, we proceed to discuss the implements of the farm used for the tillage of the soil. Of these, the plough unquestionably demands the

first consideration. Its function is to penetrate, break up and reverse the firm surface of the field. Although draught is important, economy of time and efficiency of result are the most valuable factors in a plough. The suitability of a plough for any purpose depends upon the nature of the land and the kind of work it has to do. Any plough to be efficient must thoroughly invert the soil, covering all stubble, weeds, or manure and leave a new surface exposed to the air.

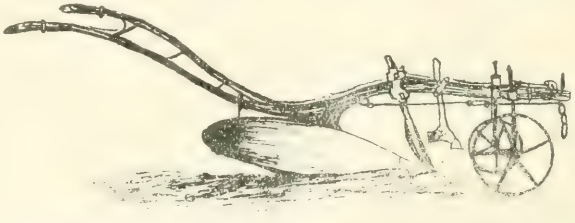
Plan of plough showing curved over end of breast and angle it forms with beam.

American general purpose plough, which will produce pulverized furrows on either light or heavy land.



British digging or pulverizing plough.

Plough suitable for light land, having a long breast much curved over at end and lying close to bottom of furrow.



Plough suitable for heavy land, having long breast raised at end. Will produce rectangular furrow.

In its action of cutting and turning over the earth, the friction is entirely a sliding one: the character of the material employed in constructing the plough, the finish imparted to it, and also the form given to the parts, are very important features in determining the force required to perform the work. It is in respect of these parts that most of the improvements in

this style of implement have been made. It follows, then, from what has been said as to materials used in construction, not only on the score of economy alone, but on account of ease of draught by decreasing friction, that all wearing parts of ploughs, instead of being made of cast iron left in the rough state as it comes from the mould, should be of chilled steel, tempered and highly polished. This improves their scouring qualities and greatly reduces the draft necessary to operate them. The addition of wheels also contributes to decrease the resistance, and consequently the ease in draft, requiring considerably less strength and skill to hold it to its work.

Speaking broadly, ploughs may be classed as those having long-breasted or mould boards, with a gradual turn, and those having short-breasts and a fairly sharp turn. In a general way it may be said that those having long-breasts will cut an unbroken rectangular furrow, while the short-breasted will produce a broken, pulverized slice having no angle. The reason for this difference is very simple. In the long-breasted ploughs, after the slice has been cut off by the coulter and share, it is very gradually raised on one side and gently pushed over into its place by the curved-over end of the mould-board. The curves of the breast traversed by the cut furrow are so long and gradual that the bending does not cause any breaking or cracking of the slice, and it is laid over whole in the same condition as it is cut.

In the short mould-board plough the same amount of curving and bending is compressed into about half the distance, with the result that the cut-off furrow is first of all bent abruptly upwards, and as the surface in contact with the breast has to travel over greater space than the upper surface, there is a tendency to split the furrow into horizontal layers. As this turning upward continues, the bending becomes too rigid for the process, and the slice becomes broken with cracks running across its width. The furrow having now reached its highest point is just as suddenly bent over away from the plough, with the result that it is again broken by cracks running along the length of the furrow. This thoroughly broken up soil falls into its place in a remarkably good tilthy condition. These results can invariably be secured by using suitable ploughs in a soil in good condition for ploughing, but cannot always be obtained under all conditions.

Every short-breasted plough will not necessarily produce the best result. The common digging plough has short enough breast and the rapid upward turn of the front will break up the furrow to a considerable extent, but the hindermost part of the wing does not, as a rule, turn over sufficiently towards the ploughing to effect the final breaking up of the furrow and to lay it in its place upside down. The tendency of the short-breasted plough whose turns up and over are not sharp enough, is for the furrow-slice to be left standing on edge when it is damp, or for the soil to simply fall off behind without being turned over at all when it is dry.

These pulverizing ploughs demand very different setting from the ordinary long-breasted kind. They will "float" as evenly and as easily as it is possible for any plough to do. But the ordinary long-breasted plough will do most efficient work when it turns a furrow about one and a half times as wide as it is deep. With any plough the furrows are laid more evenly and with the greatest regularity when it is slightly wider than the cut of the shear, for the uncut portion acts as a hinge upon which to turn the furrow and prevent the curved breast from throwing it too far over towards the ploughing. Particularly so is this the case with the short-breasted plough, for the sharp upward and outward turn of this plough tends to throw the slice away from the plough before it is properly broken, and unless the furrow slice is held in this way until the final bend breaks the hinge and drops

it into its place, untidy work is the consequence. The width of this uncut part should not exceed half the depth of the furrow. When the soil is dry and hard even the long-breasted plough will produce a somewhat broken furrow, and when the land is wet and dough-like, the most suitable short-breasted plough will fail to pulverize the soil properly; but given ordinary conditions such as are suitable for ploughing, results as stated may be looked for.

On a light sandy loam, the condition of the turned-up surface matters very little if the covering in is effectually accomplished, for whatever the shape of the furrow it is always porous and easily brought to a fine tilth. Should there be any particular conditions required on this class of soil, it is that the furrows be tightly pressed together so that there shall be no intervening spaces and that the soil shall not lie too loosely. To secure the necessary pressure of the soil, it needs only to have a plough with a long breast, which shall be adjusted at an angle sufficiently wide from the line of the beam so that the tail end of the breast shall be close to the ground with a considerable curve towards the ploughing. The effect of this arrangement is that the newly cut slice is pushed up tightly against the others and as the breast slides over it, presses the furrow firmly down: but consider for a moment the effect of this squeezing and pressing upon a soil inclined to be wet and sticky. It would render the surface in such a condition that no amount of harrowing would ever produce a reasonable tilth. We may conclude, then, that the plough should be a tillage implement; that upon any but the very lightest soils it must do more than invert the earth in regular furrows: it must leave the soil in such a condition as to be prepared for its purpose with the least possible expenditure of time and labour.

Much of the difficulty in managing short-breasted ploughs, and the unsatisfactory work produced by them, is invariably due to want of thought and precaution in setting them or ignorance as to the construction of the implement. These ploughs face the work in such a very different way from the more common shapes that they require totally different setting, and unless the operator understands the construction of his plough, he creates much needless draft, more work for himself and horses, and gives an untidy appearance to the ploughing.

So far we have regarded friction as a disadvantage to work; it may, however, be converted to do a large amount of useful service. The sustaining power of a coil of rope round a post, is a remarkable instance of the value of friction. It is found that with a coil once round a post, a man exerting a pull of 100 pounds can sustain 800 pounds, and with the same pull and two coils he can support eight times 800 lbs., and with a third coil, eight times as much as he can with the two.

These simple facts would naturally lead up to the consideration of pulleys and belting applied to various machinery.

These and kindred subjects have a direct bearing on the successful and intelligent use of machinery and implements on the farm, and I consider that adequate instruction concerning them is of essential importance. Up to the present they have not received the attention their importance warrants. I have searched the prospectuses of most of the Agricultural Colleges but have not found one in which the subjects were taken up in a way commensurate with the benefits to be derived from the use of machinery on the farm. For this and other reasons, the course will be at first largely experimental; but, with the co-operation of the various Professors, we hope to make this course not the least useful of those offered by the College.

Courses of Instruction.

Fall Term, 1905—*Normal Course.*—This term opened with five students in attendance taking various branches of Manual Training.

Chas. T. Yeo, Little Britain, Ont., a full course student, completed his term at Christmas. Soon after his graduation he was appointed to a position on the staff of Manual Training Instructors of the Board of Education, Ottawa.

C. D. Fuller, B.A., Knowlton, Que., was here for three months investigating and studying the whole system of Manual Training. He worked a large number of models of the woodworking and cardboard courses.

M. M. Hunt, Knowlton, Que., entered for a short course in woodworking, Basketry, and Colour.

J. E. Lyon, Guelph, a full course student, took up the Primary work, including Cardboard and Colour.

L. W. Taylor, Guelph, Supplementary in Woodworking.

Agricultural Course.—Sixty Second-Year students attended the Metalworking course.

Nature Study Correlated Course.—Classes in Drawing, Brush, Colour and constructive work were conducted on the lines set forth in the last report.

Optional Courses.—Nineteen pupils of the Domestic Science Department received instruction in Woodworking and Basketry.

Winter Term, 1906. *Normal Course.*—Four students were admitted. J. E. Lyon undertook some advanced work in Colour, Design, Basketry, and Cardboard modelling.

M. Bradshaw, Morden, Man., entered for a course in Primary constructive work, Colour, and Basketry.

M. M. Hall, Dunham, Que., devoted herself to Woodwork, Basketry, and Colour Work.

L. W. Taylor, Guelph, continued his supplementary Woodworking.

Agricultural Course.—Ninety-seven First-Year men received instruction in Woodworking.

Optional Courses.—Twenty-three took Woodcarving; six, Colour work, and six Art Metalwork.

Spring Term, 1906. *Normal Course.*—Three students attended.

J. E. Lyon, Woodworking.

S. Crysler, Berlin, Supplementary Primary Constructive work.

L. W. Taylor, Woodworking.

Nature Study Correlated Course.—Was attended by forty-nine students.

Optional Courses.—Ten took Woodcarving, five Colour work, and five Art Metalwork.

Fall Term, 1906. The number of students for this session are:

Normal Course, four.

Nature Study Correlated Course, ten.

Optional Courses, twenty.

I have the honour to be, Sir,

Your obedient servant,

JNO. EVANS.

PART XIX.

THE PROFESSOR OF NATURE STUDY.

To the President of the Ontario Agricultural College:

SIR,—I have the honor to present this, the third annual report of the Nature Study department.

I think it may safely be asserted that the Nature Study cause has been making progress in the schools of the Province of Ontario. This conclusion is forced on one from seeing the interest taken by teachers in the subject at their conventions and in the visits to the College. One does not find the croaker go unchallenged now; progressive teachers have proven its efficacy in training youth in powers of observation, in habits of finding reasons for things and in ready expression. Of course there is much to be done yet; teachers will for a long time continue to teach the school subjects after the manner in which they themselves were taught, and impose weary grinds on definitions, least common multiple, compound multiplications in a foreign currency, etc.; but there will gradually be a betterment of the old methods.

This change in the attitude of teachers has many causes. In the first place they are putting a reasonable interpretation on the new regulations. When they were first advanced, consternation reigned at the thought of having to know about every animate and inanimate thing under the sun. It is now felt that all that is expected of one is to do his or her best with the material at hand. Then the newer generation of teachers graduating from the Normal Schools are equipped for the work, and are taking their methods into their communities. A better class of literature also prevails: the older books had their nature lessons in the form of long lists of questions, wearisome to teacher and pupil; the newer books on methods have spontaneity for their keynote. Parents, too, are interested in this side of the children's school work; the attention paid the subject by the family newspapers, and the abundant popular nature literature that has been a feature of recent book publications, help towards this.

SPRING TERM CLASS.

Our class of this term included teachers from Manitoba and Saskatchewan. We were thus representative of all Canada with the exception of Alberta and British Columbia.

Thirty-six were holders of Macdonald Scholarships. Misses Bradshaw, Williams, and MacMillan were admitted on the same terms as regular Institute students. Mr. Bennett represented the Education Department of Saskatchewan. Mr. McCormac is the Public School Inspector for King's County, P.E.I.

Ontario.

George J. Anderson.....Cobourg.
Mable C. Buckle.....Amherstburg.
Jessie Burnett.....Perth.
Kate A. Evans.....Corinth.
Muriel J. Hockey.....Welland.
J. A. Keays.....Toronto.
A. Maud Legge.....Bethany.
Bella McDiarmid.....Avonmore.
Nealina McMillan.....Guelph.
Will H. Metcalf.....Cobourg.
Frank J. Newhouse.....St. Catharines.
John Patton.....Kemptville.
Kate M. Stewart.....Meaford.
Mary E. Stinson.....Westport.
Aggie Thorburn.....Gore Bay.

Quebec.

Margaret H. Boyd.....Granby,
Bessie C. Hall.....Cookshire.
Mary H. Hall.....Dunham.
Lucy H. Hume.....Leeds Village.
C. L. Theresa Metcalf.....Avon.
E. Winnifred Miller.....Clarenceville.
Helen Paton.....Lachute.
Elizabeth P. F. Patterson...Lachute.
Helen A. Rothney.....Leeds Village.
Ella B. Sweet.....Sutton Junction.
Sarah M. Thompson.....Kinnears Mills.
Ruby J. Godue.....Knowlton.

New Brunswick.

Georgina Dickson.....Tide Head.
Martin G. Fox.....Gagetown.
Margaret Kerr.....Bocabec.
Lena Miller.....Dalhousie.
Mary A. Reid.....Point La Nim.
Annie M. Smith.....Coverdale.

Nova Scotia.

Hattie E. Chisholm..Bear River.
Ethel Cochrane.....Windsor.
Robert Dorman.....Barrington Passage.
Jessie E. Freeman....Greenfield.
Jeanette McLeod.....Old Bridgeport Mines.
Annie J. MacMaster..Port Hood.
Mary Spencer.....Great Village.
Louis Rens Skinner..Berwick.

Prince Edward Island.

Virginia Byrne.....Clear Spring.
Ella J. Dorsey.....Charlottetown.
Grace E. Dutcher.....Charlottetown.
Margaret James.....Charlottetown.
Annie Lockhart.....St. Eleanor's.
G. J. McCormac.....Charlottetown.

Manitoba.

B. Maud Bradshaw.....Morden.

Saskatchewan.

Lindsay H. Bennet.....Regina.
Lenore Williams.....Yorkton.

Summer Term.

The Summer Course was of four weeks duration (July 3rd-28th). There were seventeen teachers in the class. The necessity of boarding in the city deters the entrance, to some extent, of a larger number. We made arrangements again as last year, however, for a noon lunch, using materials of our gardens and buying milk, butter, eggs, and bread from the College. We had the help of Mr. T. J. Moore, Principal of St. George's P. S., Guelph, during the course: he rendered excellent service in the study of birds and plants.

Summer Term Class.

Armstrong, Lottie.....Amulree.
Doan, Emma H.....Cleveland, Ohio.
Gayman, H. M.....Jordan Harbor.
Lyon, Mrs.....Guelph.
Moore, Florence E.....Eden Mills,
Marshall, Esther.....Brampton
Mackenzie, Marion F.....Marden.
Mackenzie, Eva F.....St. Thomas.
McNab, J. C.....Guelph.
Reid, Mary M.....Brisbane.
Robinson, Hattie.....St. Thomas.
Sunter, Bertha.....Meaford.
Snider, W. W.....Ottawa.
Schell, Arthur W.....Almonte.
Ward, Edward.....Collingwood.
Ward, W. G.....Guelph.
Yeo, C. T.....Little Britain.

Fall Term Class.

For different causes, this has been our smallest Nature Study Class. The Departments of Education of Nova Scotia and New Brunswick did not see their way clear to incurring the expense of sending delegations, particularly as they have now representative teachers disseminating information

acquired at Guelph to their teachers through papers and lessons at conventions. In Quebec, owing to a great dearth of teachers, only five applications were received for twelve scholarships offered, and of these, only three were able to join the class.

In Ontario, the experience of Quebec was duplicated; fourteen scholarships were advertised, five applications were received and three teachers entered for the work. Our first representatives from across seas was in this class.

Armstrong, Jennie, Miss..Bristol, Que.
Abercrombie, Ivy, Miss...Manchester, Eng.
Bartley, Annie, Miss.....Lindsay, Ont.
Cummiskey, Katie, Miss..Webster's Corner, P.E.I.
Hawken, Lizzie C., Miss..Alma, Ont.
Keilly, C. W., Mr. .....Stanley Bridge, P.E.I.
MacIntyre, Maud, Miss...Avonmore, Ont.
MacKinnon, Mary E., Miss St. Peters, P.E.I.
Scott, Ida B., Miss.....North River, P.E.I.
Sornberger, Mary I., Miss.Stanbridge East. Que.
Stevens, C. Louise, Miss..Bedford, Que.

New Equipment.

We have installed in a room adjacent to our laboratory, a work bench and kit of tools. It is not to replace the facilities offered by the Manual Training department, but to supplement them. In the pursuit of our regular work in garden, field, and laboratory, the need of making a simple piece of apparatus or repairing broken articles frequently arises and the demand for tools is felt. It is such an outfit as any well equipped farm workshop might have and such as we hope every well-equipped rural school will have as a substitution for the formal manual training equipment of the town or city school.

Besides putting the tools to practical use, they were made use of for nature study observational lessons; instruction in the mechanical principles involved in their operation, demonstrations of their construction, uses and care. This work was in charge of one of the students, Mr. L. H. Bennett of Regina.

In the Province of New Brunswick this one-bench plan is in operation in the rural schools. The trustees are aided in the purchase of the equipment by a grant from the provincial treasury, and for successful teaching of the subject teachers have their salaries substantially supplemented. The teachers must have a certificate for a short-course training to be qualified for this work.

We submit a list with the prices of each article. It is not intended that such a complete outfit is essential to a commencement in this phase of manual training. A selection of six dollars worth of tools would be ample for a beginning in many cases. The tools are classified after a scheme evolved from a general lesson on tools.

Single Bench Tool Kit, $42.00.

Cutting Tools ($15.05).

Saws.—Rip saw, $1.40; keyhole, compass or turning saw, 40c.; back or tenon saw, $1.25; panel, $1.00; metal saw, 35c.

Chisels.—1-4 in. socket mortice chisel, 25c.; 3-8 in. socket mortice chisel, 30c.; 5-8 in. socket mortice chisel, 35c.; 3-4 in. socket mortice chisel, 40c.; 1 1-4 in. socket mortice chisel, 55c.; 3-4 in. bevelled-edge firmer, 28c.; cold chisel, 5c.

Planes.—Jack plane, $1.25; block or hand plane, 65c.; spokeshave, 30c.

Files. Saw, triangular or three-cornered file, 10c.; 10 in. half-round, 30c.; 8 in. flat or mill-saw file, 15c.; 1-4 in. round or rat-tail, 15c.

Boring Tools.—1-4 in. augur bit, 15c.; 3-8 in. augur bit, 18c.; gimlet bit, 8c.; rimer bit or countersink, 13c.; gimlet, 10c.; 1-4 in., 3-8 in. 1-2 in. 9-16 in., 5-8 in., ¾ in., 7-7 in., 1 in. augur bits, $2.25; drill, 18c.

Shears.—Tinman's shears, $1.00; cutting pliers, 75c.; scissors, 75c.

Marking Tools ($6.85).

Tape measure, $2.25; land chain, $3.30; marking gauge, 15c.; mortice gauge, 60c.; scratch or marking awl, 15c.; compasses, 40c.

***Testing tools* ($2.70).**

Try square, 35c.; framing square, $1.25; bevel, 35c.; level, 75c.

Holding Tools ($3.75).

Iron bench vise, 45c.; ratchet brace, $1.50; monkey-wrench, 45c.; small screw-driver, 20c.; screw-driver or turnscrew (large), 30c.; screw-driver bit, 10c.; pliers, 75c.

Driving Tools ($2.00).

Hammer (claw), 50c.; rivetting hammer, 50c.; mallet, 35c.; nail set or punch, 15c.; saw set, 50c.

Miscellaneous ($1.65).

Oil-stone, 40c.; oil can, 5c.; putty knife, 15c.; belt punch, 10c.; glass cutter, 35c.; sloyd knife, 35c.; can-opener, 10c.; wad punch, 15c.

***Bench and Vise* ($10.00).**

Summary.

Cutting tools, $15.05; marking tools, $6.85; testing tools, $2.70; holding tools, $3.75; driving tools, $2.00; miscellaneous, $1.65; bench and vise, $10.00; total cost, $42.00.

School Gardens.

It would appear that the school garden movement in Ontario has failed to meet expectations. Although the Department of Education offers liberal terms for the acquisition of an acre of ground for garden purposes, very few schools have taken advantage of the offer.

A good work is being done in many places through horticultural societies in inducing children to grow flowers at home: and in a few places children are doing garden work in home gardens, but the formal school garden on the school grounds is practically unknown. Perhaps it will not be general until the profession steadies down into well paid and permanent conditions.

The movement is more apparent in Nova Scotia; many schools there have adopted them. The following from a letter received from one of our old students explains itself:

"My school was very large, averaging over forty scholars for some time, and some of these were doing High School work. I had three High School grades and eight Common School grades; yet I found time to do some Nature Study work and especially to drop a few helps and suggestions, leaving the pupils to follow up the same.

"From a piece of waste ground belonging to the school ground, we made a school garden, 30 x 100 ft., and fenced it. To obtain funds for fertilizer and fence, etc., we gave a concert followed by a Pie Social, which netted us about $25.00.

"The school garden proved a complete success, and my teaching did as well; for although it was a rural school, they raised my pay from $250 to $350, exclusive of grant."

Agricultural High Schools.

We have no Agricultural High Schools in Canada as yet. As a contribution to the discussion in connection with this subject, we reprint an account of the experience of the State of Wisconsin in the matter. It is taken from one of the bulletins published by the Dunn County School.

Historical Statement.

The State of Wisconsin was the first in the Union to encourage the establishment of schools for the teaching of agriculture, manual training and domestic science to the rural classes. County schools of agriculture and domestic economy were created by Act of the State Legislature of Wisconsin in 1901. The legislature two years prior to that had paved the way by the appointment of a commissioner to investigate and report upon the methods of procedure in similar work in other places. In the report the commissioner, Hon. L. D. Harvey, then State Superintendent of Public Instruction, recommended that legal authority be given to counties in the State to establish schools of this character. The law allowed two counties to build and equip such schools. Dunn county was the first to organize a county school board under the law and Marathon county soon followed. These two counties borrowed money, and built similar buildings, which were opened for use in October of that year. These courses of study were planned by the principals of the two county agricultural schools and the State Superintendent. Each school has found it necessary to modify the courses to suit the local conditions. These schools have been equipped at the expense of the counties where they are located. This is true as to buildings, furniture, apparatus, machinery and stock. But the State aids each school to the extent of $4,000 a year to apply on the running expenses.

Position of School in State System.

The chief purpose of the county agricultural schools as now established in Wisconsin is to popularize agricultural education more than can be done by a well-filled state college. The schools are subordinate to the state college in that they are not so advanced, especially in their academic subjects. Students are admitted directly from the rural schools. Most of them would never go to an agricultural school if this new class of schools were not brought close to them. Some students board at home and help with home chores, others visit home at the end of each week and are dominated by the home spirit throughout their school life. Certainly these county schools in Wisconsin reach a class of pupils that would not feel that they could spare the money necessary to attend the State Agricultural College. And yet there are students, who, after getting the work of the county school, will feel like continuing their education and will attend the State College of Agriculture. Several graduates are already planning such a course. More county schools of agriculture will help fill the State College of Agriculture to overflowing.

General Equipment.

The Dunn County School of Agriculture has three buildings located on a half block in the center of Menomonie, the county seat. Here there is still room for poultry runs and a small garden for girls' practice. Philanthropic citizens and the city gave these grounds to the School. The school farm consists of six acres located on the county fair grounds nearly one mile from the school. Here the boys of the school have practice in farm, orchard, and nursery work. The area may be increased from time to time.

Buildings for the Agricultural School.

The School has the use of four buildings:—

The main building, built by Dunn County, is 42 x 96 feet, three stories high, built of brick. The first and second floors are devoted to the uses of the School of Agriculture, and the third floor to the County Teachers' Training School. A glass wing, 30 x 30 feet, given by Mrs. Bertha Tainter, is used for greenhouse purposes.

The mechanical building, given by Senator J. H. Stout, is 24 x 50 feet, two stories high over a high bank basement.

The horticultural building, given by citizens and city, is 28 x 50 feet, two stories high over a bank basement. The basement story is what gives the building its name, as it is used for potting of plants, grafting and budding lessons, winter storage of scions, roots, bulbs and tender plants.

The farm tool house, built by students, is 14 x 16 feet, one story high. It is located on the county fair grounds near the school farm.

The probable number of students that could attend the county agricultural school at any one time is about 125.

The carpentry and blacksmith shops are supplied with the best of tools, substantial and handy benches (made by students), forges, anvils, vises, lathes, circle saw, steam engine, gasoline engine, etc. The sewing department has its cutting tables, work tables, sewing machines, tracing boards and wardrobes. The kitchen equipment, of utensils, dishes, tables, cabinets, ranges, food sets, cupboards, sink and refrigerator, is complete in every detail. The laboratory is provided with apparatus necessary for

chemistry, physics, plant life and soil experiments. Facilities for stereopticon illustration are provided. Machinery and tools for use on the farm and garden are of the most modern types.

The equipment in the dairy includes cream separators, Babcock testers, combined churn and worker, ripening vat, milk heater, scales and complete set of utensils. The sloping cement floor and brick walls make the creamery quite sanitary and modern.

Poultry quarters are constructed on model plans of economy and cleanliness. The department is supplied with two incubators and two brooders. Brooders were built by carpentry students. A Dandy bone grinder helps materially in the winter production of eggs. The best types of farm poultry are kept.

In regard to building and equipment it should be remembered that for the amount which the county has expended it has two young institutions established, viz., the Agricultural School and the Teachers' Training School. Much has been saved by building for two schools at the same time. The main building cost $16,500; the horticulture building given by citizens and city of Menomonie and repaired by insurance money after the fire of 1903, is valued at $2,600; the mechanical building given by Senator J. H. Stout was moved by the county onto a basement built by the county, valued at $3,000. The farm tool house, built by students, is valued at $100. The complete school equipment besides buildings is value at about $9,000. This includes all apparatus, furniture and tools purchased, donated to the school or made by students.

The entire property of the two county schools (Agricultural and Teachers') has cost the county $23,035. But the total valuation of the property, including the small farm, is $39,103.85. The difference is made up largely by gifts from manufacturers and citizens, and by articles made by students in the School of Agriculture.

Cost of Running the School.

The State law authorizes any county (not to exceed four) to build and equip a school of agriculture and pay the running expense for one year. After that the State will pay two-thirds of the annual cost of maintaining the school—not to exceed $4,000 for each school. Experience of two years shows that the annual running expense is about $6,000, two-thirds of which is paid by the State and only one-third by the county.

The assessed value of taxable property in Dunn county is about 10¼ million dollars. Any person with an assessment of $100 will pay less than two cents to support the school. Property assessed at $1,000 requires a payment of less than twenty cents a year, to run this school. Thus it is seen that the annual cost is almost nothing to the individual tax-payer in the county.

When such are the facts, all who may have had some fears regarding the matter of annual cost may feel at ease: for surely a county in an agricultural region can easily support its own "Farmers' School."

The farmers of the county can each receive many times more benefit from the school than it costs them.

Correlative Lines of Work for Farmers and Teachers.

Much agricultural information is disseminated from the agricultural school to the farmers of the county. Directions for planting, suggestions as to varieties, combatting noxious weeds, helping establish co-operative creameries, planning barns, silos, school houses, dwellings, devising ventilators, selecting stock, and many other subjects are taken up by the instructors with individual farmers. The School has done a great deal of milk and cream testing for farmers for the purpose of helping to improve dairy herds. On the school farm we try such new crops as should be used by those living in the section. Many hundreds of bulletins on special farm topics have been placed in the hands of farmers desiring information on these subjects.

A novel feature of the school's work in Dunn county is the introduction, through the rural teachers, of elementary agriculture and manual training into district schools of the county. By an interchange of classes with the County Teachers' School the Agricultural School teaches the rural teachers to handle these subjects in their school in a very creditable manner.

STATE OF WISCONSIN LAW REGARDING COUNTY AGRICULTURAL SCHOOLS.

Schools of Agriculture and Domestic Economy.

(Chap. 288, Laws of 1901). Section 1. The county board of any county is hereby authorized to appropriate money for the organization, equipment and maintenance of a county school of agriculture and domestic economy. The county boards of two or more counties may unite in establishing such a school, and may appropriate money for its organization, equipment, and maintenance.

SECTION 2. A board to be known as the county school board is hereby created, which shall have charge and control of all matters pertaining to the organization, equipment and maintenance of such school, except as otherwise provided by law. Said board shall consist of three members, one of whom shall be the county superintendent of schools of the county or district in which the school is located. The other members of the board shall be elected by the county board for the term of three years from the date of their election, but no member of the county board shall be eligible. Vacancies existing in the board from whatever cause, except in the case of the county superintendent, shall be filled by appointment made by the chairman of the county board, if the county board is not in session when such vacancy occurs. If the county board is in session, vacancies shall be filled by election by said board for the unexpired term. Appointments made by the chairman of the county board, as hereinbefore specified, shall be for the term to elapse until the next regular meeting of the county board. Each person appointed or created a member of the county school board, shall within ten days after the notice of such appointment, take and subscribe an oath, to support the constitution of the United States and the constitution of Wisconsin, and honestly, faithfully, and impartially to discharge his duties as a member of said board, to the best of his ability, which oath shall be filed in the office of the county clerk. He shall also, within the same time, file a bond in such sum as may be fixed by the county board, which bond shall be filed in the office of the county clerk. Within fifteen days after the appointment of said board, the members thereof shall meet and organize by electing one of their number as president. The county superintendent of schools shall be *ex-officio* secretary of the said board. The said board shall prescribe the duties of the several officers, except as fixed by law.

SECTION 3. Whenever two or more counties unite in establishing such a school, the provisions of section 2 of this Act shall apply to the organization of the county school board, and to filling vacancies therein, provided that the county superintendent of the county in which the school is located shall be a member of the board and *ex-officio* its secretary, and two members shall also be elected from each county by the county board thereof. But no member of the county board shall be eligible.

SECTION 4. Whenever two or more counties unite in establishing and maintaining such school, the county school board provided for in such cases shall determine the amount of money necessary for the equipment and maintenance of the school for the sceond year, and annually each year thereafter; they shall apportion the amount to be raised by taxation among the counties in proportion to the assessed valuation of each county, as last fixed by the state board of assessment, and shall report to the county clerk of each county the apportionment so made on or before the first Monday of November in each year. The amount so apportioned to each county shall be levied in the county tax for the ensuing year for the support of the school.

SECTION 5. The county treasurer shall be *ex-officio* treasurer of said board; all moneys appropriated and expended under the provisions of this Act, shall be expended by the county school board, and shall be paid by the county treasurer or treasurers on orders issued by said board, and all moneys received by said board shall be paid to the county treasurer for the fund of the county school board.

SECTION 6. In all county schools of agriculture and domestic economy organized under the provisions of this Act, instruction shall be given in the elements of agriculture, including instruction concerning the soil, the plant life, and the animal life of the farm; a system of farm accounts shall also be taught; instruction shall also be given in manual training and domestic economy, and such other subjects as may be prescribed.

SECTION 7. Each such school shall have connected with it a tract of land suitable for purposes of experiment and demonstration, and not less than three acres in area.

SECTION 8. The schools organized under the provisions of this Act shall be free to inhabitants of the county or counties contributing to their support, who shall be qualified to pursue the course of study, provided they shall have at least the qualifications required for completion of the course of study for common schools. Whenever students of advanced age desire admission to the school during the winter months in sufficient number to warrant the organization of special classes for their instruction, such classes shall be organized and continued for such time as their attendance may make necessary.

SECTION 9. The State Superintendent shall give such information and assistance and establish such requirements as may seem necessary for the proper organization and maintenance of such schools. With the advice of the dean of the college of agriculture of the state university, he shall prescribe the courses of study to be pursued, and determine the qualifications required of teachers employed in such schools. He shall have the general supervision of all schools established under this Act; shall from time to time inspect the same, make such recommendations relating to their management as he may deem necessary, and make such report thereon as shall give full information concerning their number, character and efficiency.

MAINTENANCE OF COUNTY SCHOOLS OF AGRICULTURE AND DOMESTIC ECONOMY

(Chapter 143, Laws of 1903, amending Section 10, Chapter 288, Laws of 1901). SECTION 10. Any school established under the provisions of this Act, whose courses of study and qualifications of whose teachers have been approved by the State Superintendent and the dean of the college of agriculture may, upon application, be placed upon an approved list of county schools of agriculture and domestic economy. A school once entered upon such list may remain listed and be entitled to state aid so long as the scope and character of its work are maintained in such manner as to meet the approval of the State Superintendent; provided, that he shall not place upon said list more than four schools. On the first day of July in each year, the secretary of each county school board maintaining a school on the approved list, shall report to the State Superintendent, setting forth the facts relating to the cost of maintaining the school, the character of the work done, the number and names of teachers employed, and such other matters as may be required by the county board or the State Superintendent. Upon receipt of such report, if it shall appear that the school has been maintained in a satisfactory manner for a period of not less than eight months, during the year closing on the thirtieth day of the preceding June, the said superintendent shall make a certificate to that effect and file it with the Secretary of State. Upon receiving such certificate, the Secretary of State shall draw his warrant, payable to the treasurer of the county maintaining such school, for a sum equal to two-thirds the amount actually expended for maintaining such school during the year; provided, that the total amount so apportioned shall not exceed four thousand dollars to any one school in any one year; when more than one county has contributed to the support of the school, the Secretary of State shall draw his warrant payable to the treasurer of each county for such portion of the state aid as the amount contributed by his county is part of the total amount contributed by all the counties for the support of the school for the preceding year. The Secretary of State shall annually include and apportion in the state tax such sum as shall have been so paid.

This chapter provides for two additional county schools of agriculture and domestic economy, and increases the amount which the state may be called upon to pay for each of such schools from one-half to two-thirds the amount expended therefor, but in no case is such amount to exceed $4,000.00.

The regulations adopted by the State of Victoria (Australia) are suggestive of this trend amongst our brethren on the other side of the world. They are taken from the official state educational Gazette of July, 1906.

REGULATION XXVI.—AGRICULTURAL HIGH SCHOOLS.

1. The Minister of Public Instruction may establish Continuation Schools, to be called Agricultural High Schools, under the following conditions:—

(*a*) At least one-half of the cost of the necessary buildings and equipment shall be contributed by local subscription.

(*b*) An area of ground of not less than twenty acres, situated in a position convenient to the High School, shall be provided, and vested in the Minister.

(*c*) At least fifty students paying prescribed fees shall be guaranteed before a proposal to establish a High School is entertained.

2.—(*a*) Agricultural High Schools shall be under the control of the Minister, who will be assisted in the questions affecting course of study and general policy by a committee, consisting of the Minister of Agriculture, the Director of Education, and the Director of Agriculture.

(*b*) A local council, consisting of five members, to be appointed by the Governor in Council, shall be established for each district High School. Their duties will be to exercise a general oversight in matters affecting their school, to expend the maintenance allowance allotted to each school, to exercise such supervision as the Minister may authorize over the farm operations, and to advise the Minister in all matters specially pertaining to the school.

3. The qualifications for enrolment of students shall be as follow:—

(*a*) Pupils must have obtained the Certificate of Merit, or must have passed the primary or some higher examination of the Melbourne University; or must have satisfied an inspector of schools that they are qualified to profit by the course of study in such school.

(*b*) They must furnish satisfactory evidence that they are of good moral character, and of good general health.

(*c*) They must be at least fourteen years of age at the date of enrolment.

4. The Minister may grant in each year scholarships entitling holders thereof to free tuition for two or more years in any approved courses of study prescribed in Agricultural High Schools.

5. The Council of any Agricultural High School may nominate for free instruction in any prescribed course of study in that school students who possess the qualifications stated in section 3, provided that the number of students so nominated shall not in any year exceed ten per cent. of the total number of students paying full fees enrolled in that school.

6. The course of study shall include such subjects as may be determined upon by the Minister, with the advice of the committee named in section 2 (*a*).

7. At least one-third of the time devoted to instruction shall be spent in the study (both practical and theoretical) of the sciences bearing upon agriculture, and one-third of the time shall be devoted to manual and practical work on the school farm or in the school workshop.

8. During their course in an Agricultural High School, students will be required to attend lessons regularly and punctually in the subjects prescribed for their course, and may further be required to devote such time to practical outdoor work as the principal may direct.

9. The fees to be paid by pupils shall be £8 8s. per annum, payable quarterly in advance.

10. No pupil shall be enrolled after the expiration of the first quarter unless with the special sanction of the Director of Education.

11. Any students may be excluded from attendance at the school on the ground of idleness or misconduct.

12. Holders of scholarships under Regulation XXI 1 (*b*) may be admitted as students at any Agricultural High School, and attendance at such school shall be held to comply with the conditions laid down in such Regulation for attendance at a Continuation School or Secondary School.

13. Candidates for admission to the teaching service of the Education Department may be admitted to an Agricultural High School under the conditions of Regulation X, for admission to a Continuation School, and all the provisions of such Regulation, so far as they may be applicable, shall be held to apply to Agricultural High Schools as regards such students.

Visits from Teachers.

In the Spring Term we had the following conventions visit the College and Institute:

May 17th and 18th.....West Bruce.	June 15th and 16th.....West Huron.
May 31st, June 1st.....East Bruce.	June 15th and 16th.....Haldimand.
May 31st, June 1st.....Oxford.	June 22nd.....St. Thomas.

As previously, we furnished them with a program for an evening session in Massey Hall.

The British teachers, too, sent out under the auspices of Mr. Mosely, visited us in small parties during the Fall Term.

In November, we made an exhibit at the Fruit and Flower Show in Toronto, and helped in instructing the visiting school children. Previous to the show there was a demonstration and lecture to the teachers on practical nature collecting.

We extend our thanks again to the College Faculty at large for the valuable help they have given us in our work. We have tried to arrange for short series of lectures or demonstrations in every department, so that our students may have a comprehensive view of the work of the college.

Respectfully submitted,

S. B. McCREADY.

PART XX.

THE LIBRARIAN.

To the President of the Ontario Agricultural College:

Sir,—I have the honor to submit herewith a brief report of the Library for 1906.

During the year we have added 1,300 books to our shelves, which are classified as follows:

Agriculture	194	English	111
Horticulture	42	General Literature	128
Forestry	40	Fiction	59
Veterinary Science	15	Economics	44
Poultry	6	Education	13
Apiculture	5	Public Speaking	19
Entomology	25	Biography	50
Chemistry	67	History	35
Bacteriology	39	Psychology	10
Botany	70	Domestic Science	15
Biology	55	Hygiene	9
General Science	85	Nature Study	15
Dairying	28	Architecture	7
Geology	32	Statistics	6
Astronomy	14	Dictionaries and Encyclopaedias	10

We have had 170 volumes bound, and have purchased back numbers of the following periodicals in order to complete sets: Coates's Herd Book, volumes 32-51; American Clydesdale Stud Book, volumes 1-11; Entomological News, volumes 1-12; The Outlook, volumes 48-71; American Geologist, volumes 1-26.

Through the kindness of the late Walter Riddell, Esq., of Cobourg, we have received the following sets of agricultural journals, valuable in historical research work: The Canada Farmer, 7 volumes; The Cultivator, 20 volumes; The Canadian Agriculturist, 9 volumes.

We desire to take this opportunity of expressing our appreciation of all our exchanges, especially of the United States Department of Agriculture and the Experiment Stations of America, Australia, Cape Colony, India, Japan, South America and Europe. We wish also to acknowledge gratefully the following gifts: From His Excellency Earl Grey: Men of Might, The Empire and the Century, The Hill, Songs of the Glens of Antrim, The Little Flowers of St. Francis of Assisi; and from the United States Commissioner of Fish and Fisheries, nine volumes of U. S. Fish Commission Reports.

I have the honor to be, sir,

Your obedient servant,

ALICE G. ROWSOME,

Acting Librarian.

PART XXI.

THE COLLEGE PHYSICIAN.

To the President of the Ontario Agricultural College:

Sir,—I beg to present to you my report for the year now closing.

The health of Macdonald Hall has been fairly good during the year. On three occasions we were obliged, during last winter, to remove patients to the General Hospital of this city for treatment. Many of the residents suffered from Tonsilitis and Influenza, but no grave conditions developed among them. Early in January a case of Varicella occurred on one of the students but, fortunately, no others contracted the disease. Amongst the staff employed in the kitchen a number of minor accidents occurred—slight burns and scalds and injuries from the bread-cutter. In one instance this machine took a large slice off the ball of the thumb of the young lady's left hand, and she was laid off work for some time. Thus far this fall the students of Macdonald Hall have enjoyed health.

Among the young men attending the College Tonsilitis and Influenza were of frequent occurrence during the winter and also during the late autumn months. A number of minor accidents have come under my care, and one case of Appendicitis. I have also to report a fracture of the femur in the oldest employee amongst the female help in the College. In coming down a short stair she fell and sustained what practitioners consider a bad form of the injury. She was removed to St. Joseph's Hospital for treatment, where she is making a very satisfactory recovery. In the month of December a case of Varicella occurred in the College but spread to no others.

The occurrence of these two cases of contagious disease emphasizes very strongly the need for suitable hospital accommodation in this large and growing institution. At the present time there is no place in which to isolate a case of contagious disease during any period of doubt as to its nature.

The general sanitary condition of the College is excellent.

Respectfully submitted,

W. O. STEWART.

Guelph, Ont., Dec. 24, 1906.

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